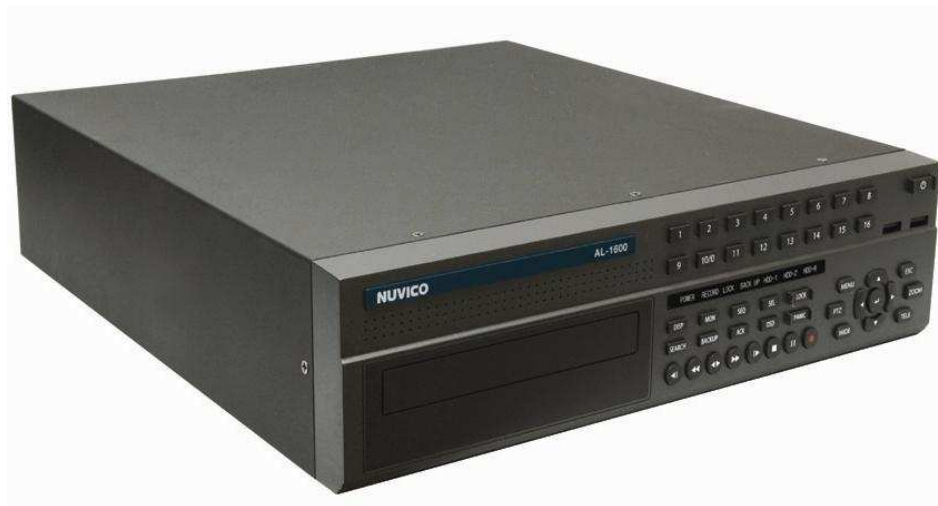

NUVICO

APEX LITE DIGITAL VIDEO RECORDER



AL-400
AL-800
AL-1600
AL-3200

CONTENT VERIFICATION

Before installing the DVR, please make sure that the following items are included in the box:

1. Digital Video Recorder
2. Remote Controller
3. DVR Client Software CD
4. Power Cable
5. Two AAA Batteries
6. This Instruction Manual

If any of these materials are missing, please contact the vendor or NUVICO customer help desk immediately at (866) 523-1700.

DISCLAIMER

- While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions.
- NUVICO reserves the right to change the specifications of the hardware and software described herein at any time without prior notice.
- No part of this guide may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without prior written permission of NUVICO.
- NUVICO makes no warranties for damages resulting from corrupted or lost data due to a mistaken operation or malfunction of the Digital Video Recorder, the software, the hard drives, personal computers, peripheral devices, or unapproved/unsupported devices.

Trademark Acknowledgements

- NUVICO, NUVICO EasyNet –VMS, NUVICO EasyNet - WebViewer are trademarks of NUVICO, Inc.
- SV35 series HDDs are a trademark of Seagate Corporation.
- Microsoft, Windows98, Windows ME, Windows NT, Windows XP, Internet Explorer are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Other names and products not mentioned above may be registered trademarks or trademarks of their respective companies.

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FCC NOTICE

APEX Digital Video Recorders

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The hard disk provided with the digital video recorder must be used with this equipment in order to comply with Class B limits in subpart B of Part 15 of FCC rules.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

NUVICO, Inc.

53 Smith Street, Englewood, NJ 07631

Tel: (866) 523-1700

Canadian Radio Interference Regulations

THIS CLASS B DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE CAUSING EQUIPMENT REGULATIONS.

Read this First

Test Sessions

Before you try to record important subjects, we highly recommend that you make several test recording and playback sessions to ensure that the Digital Video Recorder is operating and being operated correctly. Please note that NUVICO, its subsidiaries and affiliates, and its distributors are not liable for any consequential damages arising from any malfunction of a Digital Video Recorder or its accessory, including the hard disk drive, which results in the failure of an image to be recorded or to be recorded in a format that is machine sensible.

The Privacy act of 1974 (5 U.S.C. § 552a)

Please note that NUVICO Digital Video Recorders are intended for recording of surveillance use and should never be used in a manner that invades other people's privacy or contravenes international or domestic privacy act and its regulations. Please be advised that in certain cases the recording of individuals, private properties, or commercial properties by means of camera or other devices may contravene legal rights of such individuals even if the images were recorded for personal use.

Warranty Limitations

This Digital Video Recorder's warranty is only effective in the country of sale. If a problem arises while the DVR is in use abroad, please convey it back to the country of sale before proceeding with a warranty claim to NUVICO customer help desk.

SAFETY PRECAUTIONS

- Before using the Digital Video Recorder, please ensure that you read and understand the safety precautions described below. Always ensure that the Digital Video Recorder is operated correctly.
- The safety precautions noted on the following pages are intended to instruct you in the safe and correct operation of the DVR and its accessories to prevent injuries or damage to the self, other persons and equipment.
- In this Instruction Manual, the term “DVR”, “equipment” and “device” refers primarily to the Digital Video Recorder and its accessories such as power supply and its remote controller.

WARNING

- Do not cover the ventilation opening or slots on the outer casing. To prevent the DVR from overheating, provide at least two inches of air space around the vent and the slots.
- Do not drop metallic parts through slots. This could permanently damage the Digital Video Recorder. Immediately turn the DVR’s power off or unplug the power cord from the power outlet. Contact a qualified service personnel authorized by the equipment distributor or a NUVICO customer help desk.
- Do not attempt to disassemble or alter any part of the equipment that is not expressly described in this guide. Disassembly or alteration may result in high voltage electrical shock. Internal inspections, alterations and repairs should be conducted by qualified service personnel authorized by the equipment distributor or NUVICO customer help desk.
- Stop operating the equipment immediately if it emits smoke or noxious fumes. Failure to do so may result in fire or electrical shock. Immediately turn the DVR’s power off, remove the power cable from the power outlet. Confirm that smoke and fume emissions have ceased. Please consult the DVR distributor or the closest NUVICO customer help desk.
- Stop operating the equipment if a heavy object is dropped or the casing is damaged. Do not strike or shake. Failure to do so may result in fire or electrical shock. Immediately turn the DVR’s power off or unplug the power cord from the power outlet. Please consult the DVR distributor or the closest NUVICO customer help desk.
- Do not allow the equipment come into contact with, or become immersed in, water or other liquids. Do not allow liquids to enter the interior. The DVR has not been waterproofed. If the exterior comes into contact with liquids or salt air, wipe it dry with a soft, absorbent cloth. In the event that the water or other foreign substances enter the interior, immediately turn the DVR’s Power off or unplug the power cord from the power outlet. Continued use of the equipment may result in fire or electrical shock. Please consult the DVR distributor or the closest NUVICO customer help desk.

-
- Do not use substances containing alcohol, benzene, thinners or other flammable substances to clean or maintain the equipment. The use of these substances may lead to fire. Use a dry cloth on a regular periodic basis and wipe away the dust and dirt that collects on the device. In dusty, humid or greasy environments, the dust that collects around the ventilation or the slots on the outer casing over long periods of time may become saturated with humidity and short-circuit, leading to fire.
 - Do not cut, damage, alter or place heavy items on the power cord. Any of these actions may cause an electrical short circuit, which may lead to fire or electrical shock.
 - Do not handle the device or power cord if the hands are wet. Handling it with wet hands may lead to electrical shock. When unplugging the cord, ensure that you hold the solid portion of the plug. Pulling on the flexible portion of the cord may damage or expose the wire and insulation, creating the potential for fires or electrical shocks.
 - Use only the recommended power accessories. Use of power sources not expressly recommended for this equipment may lead to overheating, distortion of the equipment, fire, electrical shock or other hazards.
 - Do not place the battery near a heat source or expose it to direct flame or heat. Neither should you immerse them in water. Such exposure may damage the battery and lead to the leakage of corrosive liquids, fire, electrical shock, explosion or serious injury.
 - Do not attempt to disassemble, alter or apply heat to the battery. There is serious risk of injury due to an explosion. Immediately flush with water any area of the body, or clothing that comes into contact with the inner contents of the battery. If the eyes or mouth contact these substances, immediately flush with water and seek medical assistance from a medical professional.
 - Avoid dropping or subjecting the battery to severe impacts that could damage the casings. It could lead to leakage and injury.
 - Do not short-circuit the battery terminals with metallic objects, such as key holders. It could lead to overheating, burns and other injuries.
 - The supplied power supply and power cord are designed for exclusive use with the Digital Video Recorder. Do not use it with other products or battery. There is a risk of fire and other hazards.

CAUTION

- Avoid using, placing or storing the equipment in places subject to strong sunlight or high temperatures, such as the greenhouse or trunk of a car. Exposure to intense sunlight and heat may cause the battery to leak, overheat or explode, resulting in fire, burns or other injuries. High temperatures may also cause deformation of the casing. Ensure that there is good ventilation when using the equipment.
- Do not store the equipment in humid or dusty areas. Storage in such areas could lead to fire, electrical shock or other damage.
- Do not operate the DVR beyond its specified temperature, humidity or power source ratings. Do not use the DVR in an extreme environment such as in high temperature or high humidity. Use the device at temperatures within 41°F - 104°F and humidity below 90 %. The normal operating power source for this device is 110V-220V AC 50/60Hz.

PREVENTING MALFUNCTION

- Avoid Strong Magnetic Fields. Never place the DVR in close proximity to electric motors or other equipment generating strong electromagnetic fields. Exposures to strong magnetic fields may cause malfunctions or corrupt image data.
- Avoid Condensation Related Problems. Moving the equipment rapidly between hot and cold temperatures may cause condensation (water droplets) to form on its external and internal surfaces. You can avoid this by placing the equipment in an airtight, resealable plastic bag and letting it adjust to temperature changes slowly before removing it from the bag.
- If Condensation forms inside the Digital Video Recorder. Stop using the equipment immediately if you detect condensation. Continued use may damage the equipment. Remove the power cord from the power outlet and wait until the moisture evaporates completely before resuming use.

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DIGITAL VIDEO RECORDER LAYOUT

1. FRONT PANEL (AL-400, AL-800, AL-1600)



1. POWER BUTTON

This button turns the unit on or off.

2. NUMERIC BUTTONS 1 ~ 16

These buttons have a number of functions to enter data and to make selections. They are used to enter numerical values when prompted for the password and to make channel/camera selection.

3. RECORD / STOP / PLAYBACK / STILL

- RECORD: Start recording
- STOP: Stop recording or playback
- PLAYBACK: Start playback of recorded data. By default, the playback starts from the latest recording on the hard drive. Pressing this button once more during the playback will change the direction of the playback.
- STILL: Pause playback

4. STATUS INDICATOR

Five LEDs display the status of the Digital Video Recorder. From the left, Power, Recording, Network, Lock, Back up, HDD-1, HDD-2, HDD-R.

5. USB 2.0 PORT

The USB port is to connect external backup devices such as thumb drive. Also used for a mouse.

6. DVD-RW

The tray to insert the blank media, CD-R or DVD-R for backup

7. DIRECTIONAL BUTTONS / ENTER BUTTON

The directional buttons are used in various ways:

- Navigate through menus
- Control PTZ cameras
- UP: Freeze live images
- Down: Display next set of channels on a live display mode
- Right: Instant playback

The Enter button is used on the menu of the DVR.

8. MENU

The menu button is to access the main menu of the DVR.

9. ESC

The ESC button is to exit from the main or each menu of the DVR.

10. PTZ

This button is to accesses PTZ control mode.

11. ZOOM

This button is used to digitally zoom into a specific area in live screen. Use directional buttons to navigate. When utilizing NUVICO PTZ camera, this button functions as Focus button in PTZ menu mode.

12. WIDE

This button is used to zoom out within PTZ control.

13. TELE

This button is used to zoom in within PTZ control.

14. DISPLAY

This button is used to switch between multiple display modes.

15. MONITOR

This button is used to select different monitors to control between MONITOR 1 and SPOT MONITOR. It can be disabled by turning MONITOR button OFF from the SYSTEM INFO menu.

16. SEQUENCE

This button is used to activate camera sequencing. Press and hold to activate Sequence Tour List.

17. SELECT

This button is used to select a camera for PTZ control in multi display mode.

18. LOCK

This button is used to lock the buttons on the front panel/remote controller by logging off. Press it again and then apply appropriate password to deactivate the function. It can be disabled by turning AUTO LOGIN function on from the LOCAL USER menu.

19. SEARCH

This button accesses the search menu. The search menu includes Calendar/ Log and GOTO search.

20. BACKUP

This button is to enter backup menu.

21. ACKNOWLEDGE

This button is used to manually turn off alarm relay and buzzer when set for unlimited duration.

22. OSD

This button is used to change on screen display.

23. PANIC

This button is used to manually turn on/off the Panic recording mode. It can be manually configured in Quick Setup menu.

1. FRONT PANEL (AL-3200)



1. POWER BUTTON

This button turns the unit on or off.

2. NUMERIC BUTTONS 1 ~ 32

These buttons have a number of functions to enter data and to make selections. They are used to enter numerical values when prompted for the password and to make channel/camera selection.

3. RECORD / STOP / PLAYBACK / STILL

- RECORD: Start recording
- STOP: Stop recording or playback
- PLAYBACK: Start playback of recorded data. By default, the playback starts from the latest recording on the hard drive. Pressing this button once more during the playback will change the direction of the playback.
- STILL: Pause playback

4. STATUS INDICATOR

Five LEDs display the status of the Digital Video Recorder. From the left, Power, Recording, Network, Lock, Back up, HDD-1, HDD-2, HDD-3, HDD-4.

5. USB 2.0 PORT

The USB port is to connect external backup devices such as thumb drive. Also used for a mouse

6. DVD-RW

The tray to insert the blank media, CD-R or DVD-R for backup

7. DIRECTIONAL BUTTONS / ENTER BUTTON

The directional buttons are used in various ways:

- Navigate through menus
- Control PTZ cameras
- UP: Freeze live images
- Down: Display next set of channels on a live display mode
- Right: Instant playback

The Enter button is used on the menu of the DVR.

8. MENU

The menu button is to access the main menu of the DVR.

9. ESC

The ESC button is to exit from the main or each menu of the DVR.

10. PTZ

This button is to access PTZ control mode.

11. ZOOM

This button is used to digitally zoom into a specific area in live screen. Use directional buttons to navigate. When utilizing NUVICO PTZ camera, this button functions as Focus button in PTZ menu mode.

12. WIDE

This button is used to zoom out within PTZ control.

13. TELE

This button is used to zoom in within PTZ control.

14. DISPLAY

This button is used to switch between multiple display modes.

15. MONITOR

This button is used to select different monitors to control between MONITOR 1 and SPOT MONITOR. It can be disabled by turning MONITOR button OFF from the SYSTEM INFO menu.

16. SEQUENCE

This button is used to activate camera sequencing. Press and hold to activate Sequence Tour List.

17. SELECT

This button is used to select a camera for PTZ control in multi display mode.

18. LOCK

This button is used to lock the buttons on the front panel/remote controller by logging off. Press it again and then apply appropriate password to deactivate the function.

It can be disabled by turning AUTO LOGIN function on from the LOCAL USER menu.

19. SEARCH

This button accesses the search menu. The search menu includes Calendar/ Log and GOTO search.

20. BACKUP

This button is to enter backup menu.

21. ACKNOWLEDGE

This button is used to manually turn off alarm relay and buzzer when set for unlimited duration.

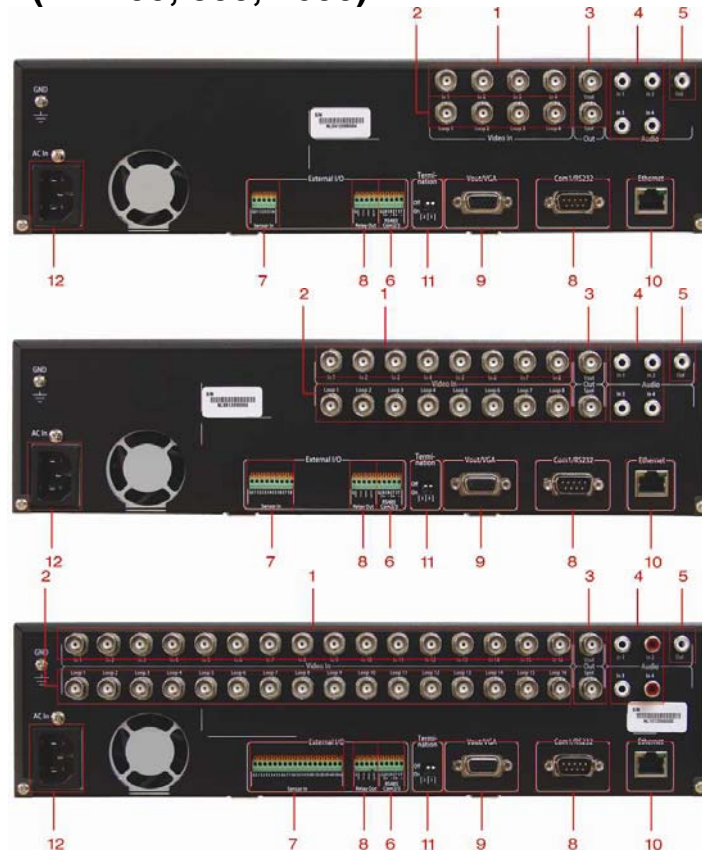
22. OSD

This button is used to change on screen display.

23. PANIC

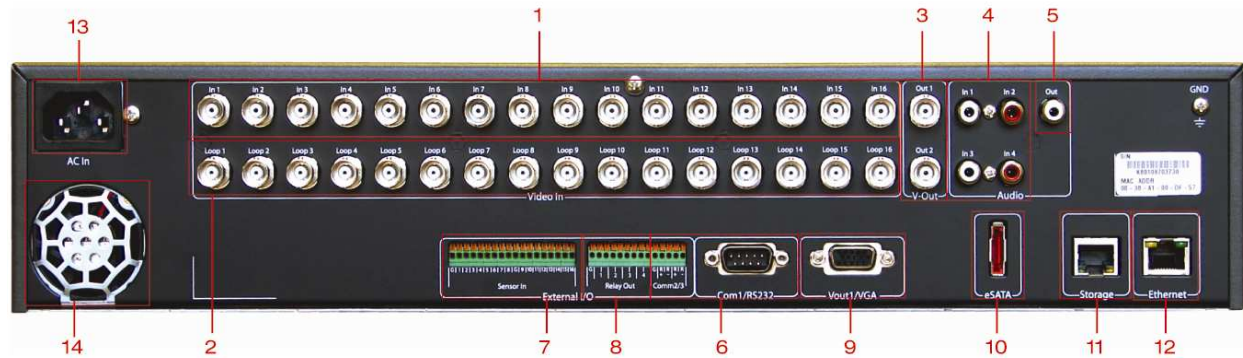
This button is used to manually turn on/off the Panic recording mode. It can be manually configured in Quick Setup menu.

2. REAR PANEL (AL-400, 800, 1600)



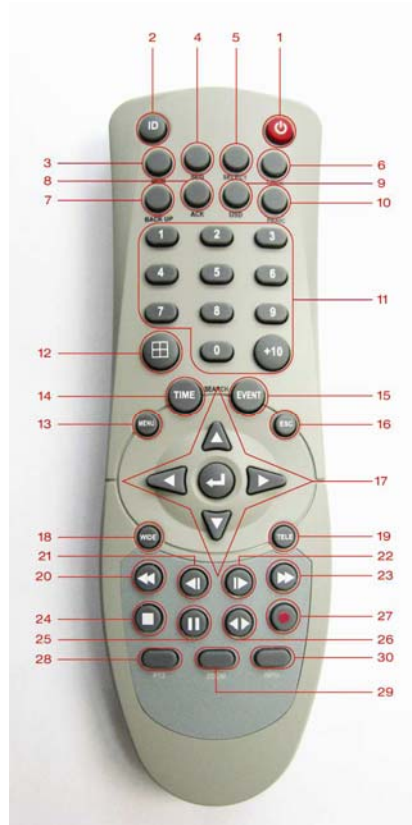
1. CAMERA INPUTS: AL-400: 1 ~ 4, AL-800: 1~8, AL-1600: 1~ 16
BNC connectors for composite video inputs
2. LOOP OUTPUTS: BNC connectors for composite video outputs
3. MONITOR OUTPUTS:
Main (top) : Displays OSDs, menu, and single channel view as well as multi channel views
Spot (bottom) : Displays single channel view only without any OSDs
4. AUDIO INPUT 1 ~ 4: Four female RCA connectors for audio input
5. AUDIO OUTPUT: One female RCA connector for audio output
6. RS-485 / RS-422 / RS-232C: Connectors to connect PTZ cameras or keyboard controller(CK-3X)
7. ALARM SENSOR INPUTS: 4, 8, 16 dry contacts for alarm/sensor input
8. ALARM RELAY OUTPUTS: 2 relay outputs for external alarm triggering
9. VGA OUTPUT: Displays and operates same as Monitor 1
10. RJ45 ETHERNET PORT: 10/100Base-T RJ45 Ethernet Port for network connection
11. TERMINATION SWITCH
12. AC POWER SOCKET

2. REAR PANEL (AL-3200)



1. CAMERA INPUTS: 1 ~ 16 BNC connectors for composite video inputs
2. CAMERA INPUTS: 17 ~ 32 BNC connectors for composite video inputs
3. MAIN MONITOR OUTPUTS 1,2: BNC connectors for main monitor outputs
4. AUDIO INPUT 1 ~ 4: Four female RCA connectors for audio input
5. AUDIO OUTPUT: One female RCA connector for audio output
6. RS-485 / RS-422 / RS-232C: Connectors to connect PTZ cameras or keyboard controller(CK-3X)
7. ALARM SENSOR INPUTS: 16 dry contacts for alarm/sensor input
8. ALARM RELAY OUTPUTS: 4 relay outputs for external alarm triggering
9. VGA OUTPUT: Displays and operates same as Monitor 1
10. NOT SUPPORTED
11. NOT SUPPORTED
12. RJ45 ETHERNET PORT: 10/100Base-T RJ45 Ethernet Port for network connection
13. AC POWER SOCKET
14. POWER FAN

3. IR REMOTE CONTROLLER



1. POWER : This button turns the DVR off.
2. ID : This is button is to set the ID of the remote controller. **Press this button 16 times or until the DVR beeps to match the ID with the DVR**
3. MON : This button is used to select different monitors to control.
4. SEQ : This button is used to activate camera sequencing. Press and hold to activate Sequence Tour List.
5. SELECT : This button is used to select a camera for PTZ control in multi display mode.
6. LOCK : This button is used to lock the buttons on the front panel/remote controller by logging off. Press it again and then apply appropriate password to login.
7. BACKUP: This button is to enter BACKUP menu.
8. ACK : This button is used to manually turn off alarm relay and buzzer when set for unlimited duration.
9. OSD : This button is used to change on screen display.
10. PANIC : This button is used to manually turn on/off the Panic recording mode. It can be manually configured in Quick Setup menu.

11. Numeric Buttons 0~9 & +10

12. DISPLAY : This button is used to switch between multiple display modes.

13. MENU : The menu button is to access the main menu of the DVR.

14. TIME : This button accesses the search menu.

15. EVENT : RESERVED

16. ESC : The ESC button is to exit from the main or each menu of the DVR.

17. DIRECTIONAL BUTTONS / ENTER BUTTON

The directional buttons are used in various ways:

- Navigate through menus
- Control PTZ cameras

The Enter button is used on the menu of the DVR.

18. WIDE : This button is used to zoom out within PTZ control mode.

19. TELE : This button is used to zoom in within PTZ control mode.

20. FAST REWIND : During playback mode, press this button to fast rewind.

21. STEP REVERSE : During playback mode, press this button to play picture by picture in reverse direction.

22. STEP FORWARD : During playback mode, press this button to play picture by picture in forward direction.

23. FAST FORWARD : During playback mode, press this button to fast forward.

24. STOP : During live mode, press this button to stop recording. During playback mode, press this button to return to live mode.

25. STILL : During playback mode, press this button to pause the playback.

26. PLAY : During live mode, press this button to start playback. During playback mode, press this button to switch play direction.

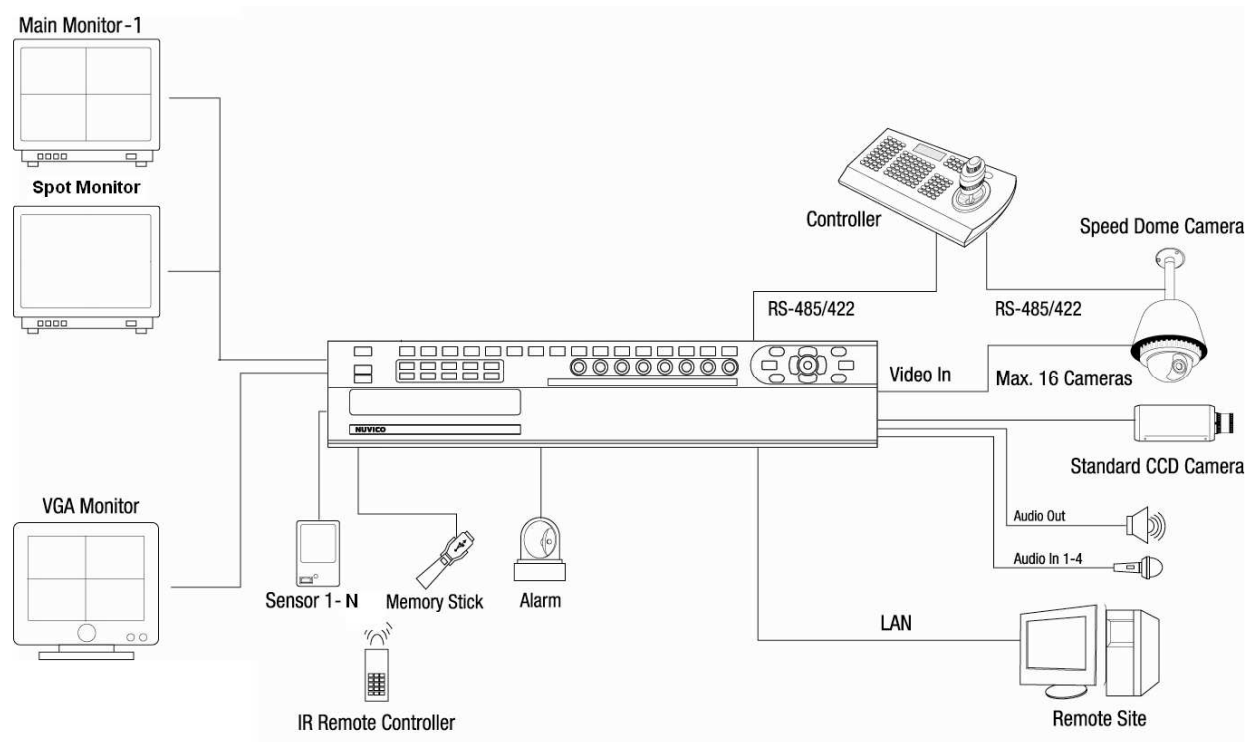
27. REC : Press this button to start recording.

28. PTZ : Press this button to activate/deactivate PTZ mode.

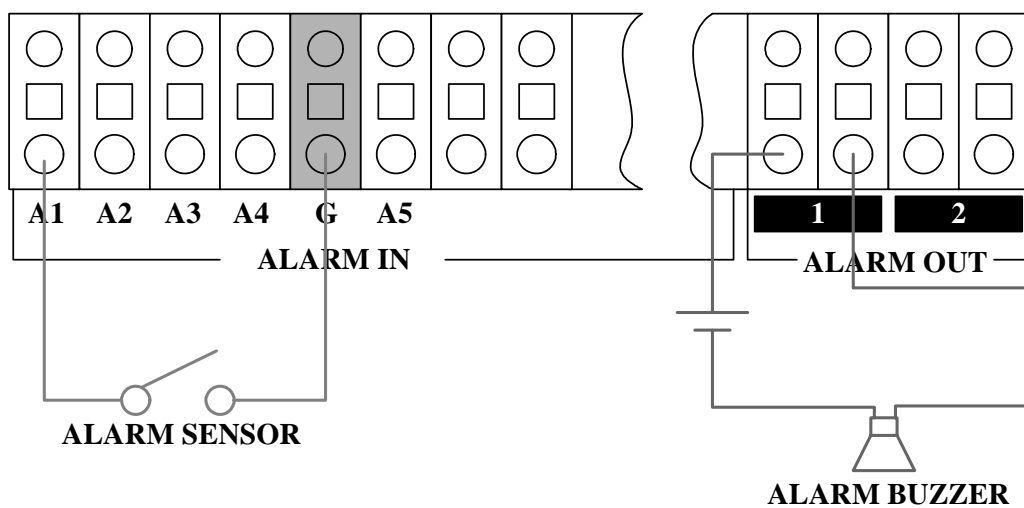
29. ZOOM : This button is to digitally zoom into a specific area in live screen. Use directional buttons to navigate. When utilizing NUVICO PTZ camera, this button functions as Focus button in PTZ menu mode.

30. INFO : RESERVED

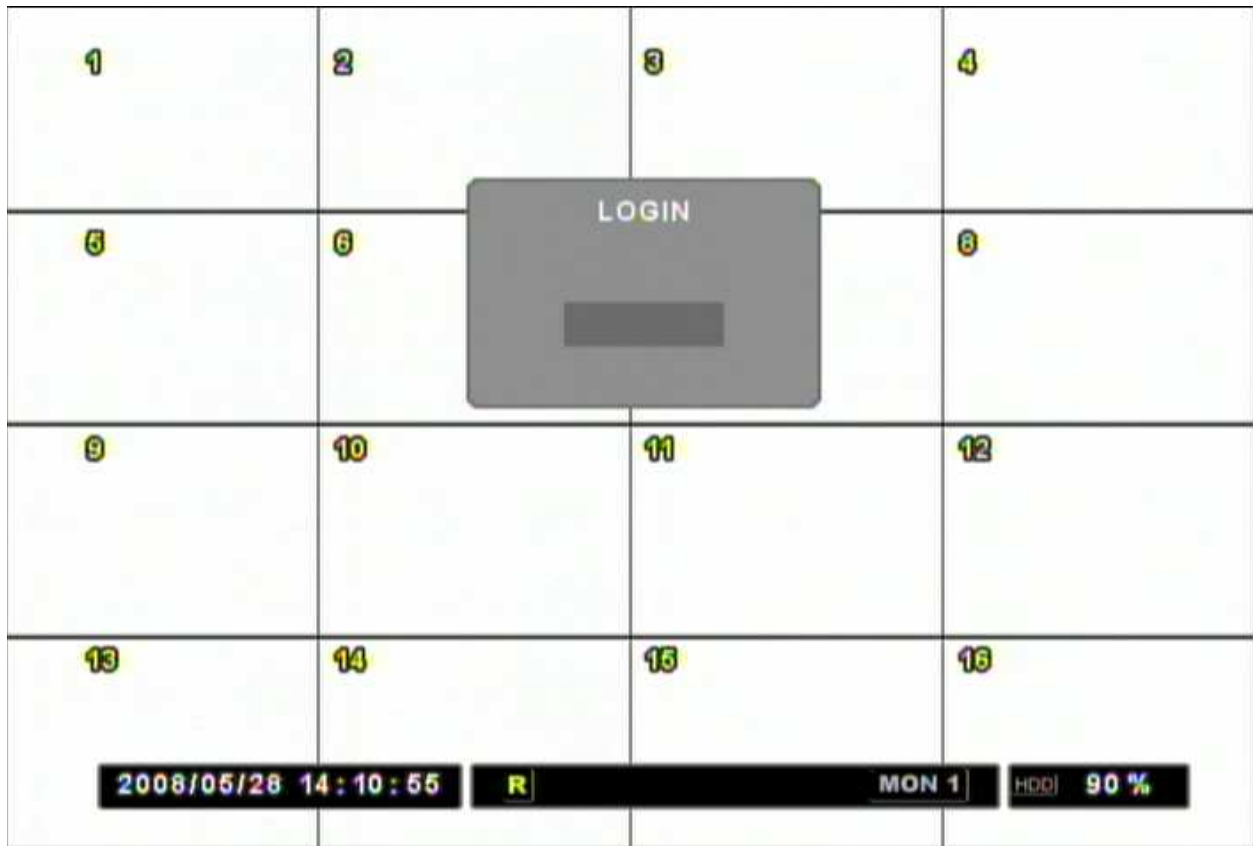
4. INSTALLATION AND CONNECTION



5. ALARM CONNECTION



DEFAULT ADMIN LOGIN PASSWORD



The default admin password for DVR is “000000.”

Mouse operation basics:

Scroll: Navigates through the menus and sub menus.

Left click: Select an item and change a value in some menu.

Right click: Displays mouse menu from the live mode also used same as an ESC button in the menu

I. QUICK SETUP



When the DVR is powered on for the very first time, the time and date may be incorrect. Before any other operation of the Digital Video Recorder, it is important to setup the time and the date.

Directional buttons are used to navigate through all the main categories and their submenus. ENTER button is used to access and to save the settings and to change the values in certain sub-menus. ESC button is used to revert back to previous settings and exiting the submenus without saving any changes.

A. DATE/TIME



To adjust the date & time, stop the recording first. Go to the MENU then select QUICK SETUP. Under the DATE/TIME tab. Set appropriate time zone, daylight saving option, date, and time. Select SAVE to apply new values. When finished, exit from the Menu then press the Record button to start recording.

B. GLOBAL RECORD

The DVR is set with predefined record settings on initial power-up. The unit will start recording immediately. Please note that the default recording setting is ON. The factory default setting is NORMAL recording as follow:

ALL CHANNELS	USE	RESOLUTION	PPS	QUALITY	MOTION
AL-400	ON	FIELD	7	Q5	OFF
AL-800	ON	FIELD	7	Q5	OFF
AL-1600	ON	FIELD	7	Q5	OFF
AL-3200	ON	FIELD	7	Q5	OFF



For quick set up, GLOBAL RECORD can be used to apply one record setting to all cameras.

For resolution:

- D1 stands for 720 x 480 (4 CIF),
- FIELD stands for 720 x 240 (2 CIF),
- CIF stands for 360 x 240.

For Quality:

- Q1: Lowest quality
- Q5: Highest quality

MAXIMUM RECORDING RATES PER CHANNEL	CIF	FIELD	D1	QUALITY
AL-400	30	30	30	Q5
AL-800	30	30	15	Q5
AL-1600	30	15	7	Q5
AL-3200	30	15	7	Q5

Enter the desired recording values then select SAVE to apply.

C. RECORD WIZARD

Categorized as FRAME RATE PRIORITY and PICTURE QUALITY PRIORITY, the RECORD WIZARD is used to set the recording parameters by entering desired days of recording at the given HDD capacity. After programming desired values, simply select SAVE and the DVR will automatically apply the appropriate settings.

1. FRAME RATE PRIORITY



Set recording priority with FRAME RATE to maintain FRAME RATE at the highest as possible level.

As the number of days increase, the DVR may decrease the resolution and the picture quality as compensation.

*Warning: This is for reference only. Actual days of recording may vary.

2. PICTURE QUALITY PRIORITY

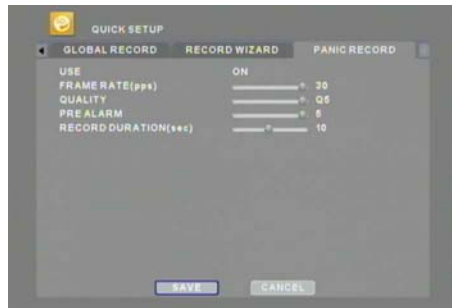


Set recording priority with PICTURE QUALITY to maintain PICTURE QUALITY at the high as possible level.

As the number of days increase, the DVR may decrease the frame rate and the resolution as compensation.

*Warning: This is for reference only. Actual days of recording may vary.

D. PANIC RECORD



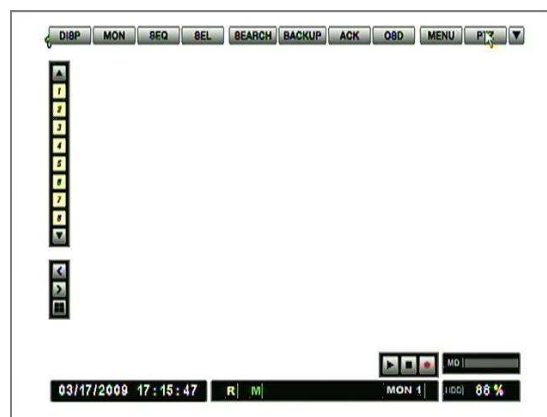
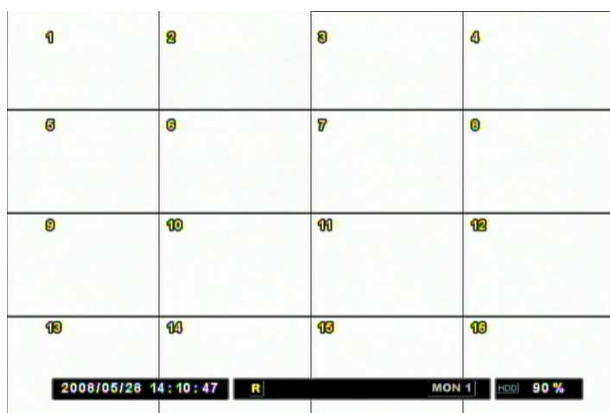
PANIC RECORD may be used in case of emergency. The DVR will record according to the PANIC RECORD setting when the PANIC button is pressed.

The recording rate on the PANIC RECORD also counted as part of total recording rate. Please set the FRAME RATE to 1 if it is not used.

II. BASIC OPERATION

This section will cover basic features of the DVR such as simple recording and playback. It will also cover the main screen outlining many alert, operational, channel, DVR status, time, and hard drive space counter. Moreover, it will also address several live view modes the DVR has to offer, which include multi-channel view modes, automatic sequence modes and zoom features. Finally, this section will also cover the information screen where all basic information about the DVR is displayed, as well as the log screen where all activities of the DVR are logged.

A. MAIN SCREEN



STANDARD INTERFACE ICON LIST			
	RECORD		PTZ MODE
	MOTION		PERCENTAGES OF USED SPACES ON THE HDD
	ALARM		MOTION GAUGE
	VIDEO LOSS		AUDIO
	MONITOR NUMBER		SEQUENCE TOUR LIST
			USER SEQUENCE TOUR LIST
MOUSE INTERFACE ICON LIST			
BUTTONS	PLEASE REFER PAGE10 FOR DETAIL		MOVE ICON BAR TO BOTTOM OF THE SCREEN
	DISPLAY NEXT SET OF CAMERAS		

The icons on the mouse menu are similar set of icons as standard menu. They also responses the same way as DVR buttons would do. See page16 for “Mouse operation basics “for how each buttons on the mouse works.

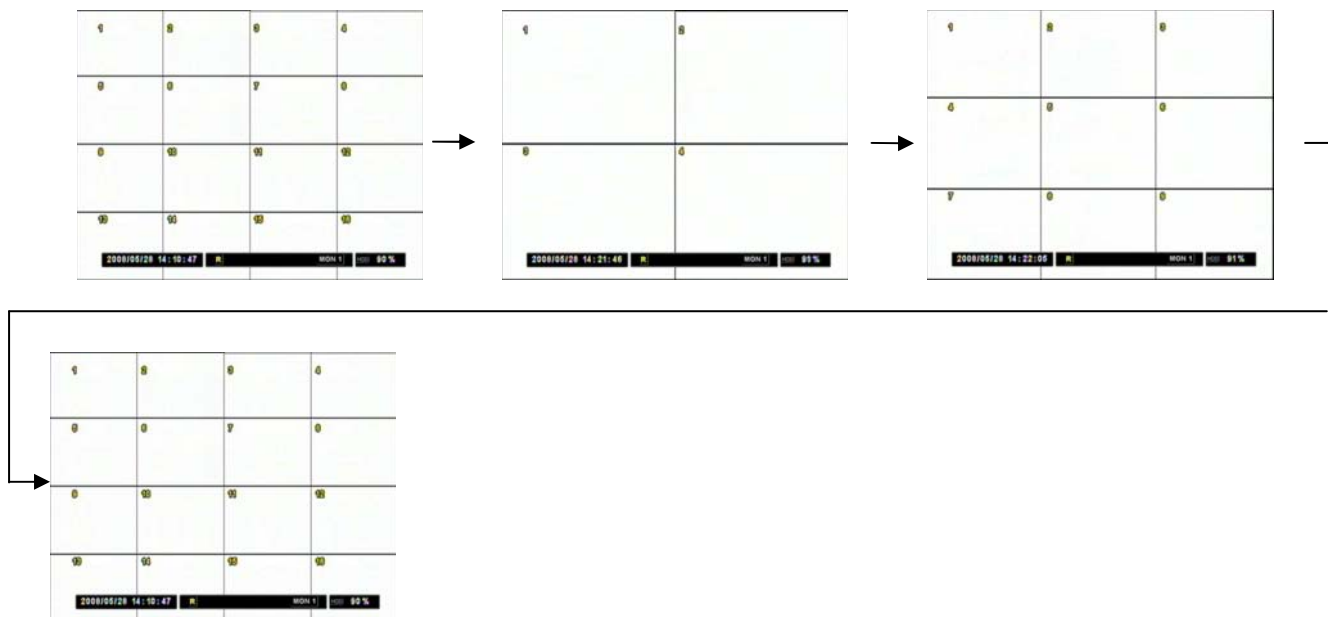
B. LIVE VIEW

LIVE VIEW displays each channel at 30 frames per second, for a total of 480(960) frames per second on the AL-400,800,1600,3200.

1. LIVE VIEW SWITCH SEQUENCE

The APEX DVR has numerous display modes, from single, quad, 9, and 16 channel display modes. The single channel display mode can be accessed directly by pressing the appropriate channel button. The rest of the display modes can be accessed sequentially by pressing the display button. The following illustrations display the order of live view mode sequences:

Live View Sequence of APEX DVR



* AL-3200:

By default Monitor 1 displays cam 1~16, Monitor 2 displays cam 17~32. Monitor switch function can be used to toggle between cam 1~16 and cam 17~32 on the Monitor 1 and VGA.

2. AUTOMATIC SEQUENCE

There are several different sequence modes that can be selected and activated. Press the display button or a numeric button to access the desired channel view mode. Thereafter, press the SEQ button to activate the sequence mode. In addition, APEX series DVRs support “User sequence” mode which let user customize channels and view modes to sequence.

Please refer to DEVICE under MONITOR section of the menu for more information. The following illustrations demonstrate sample display sequences and their combinations.

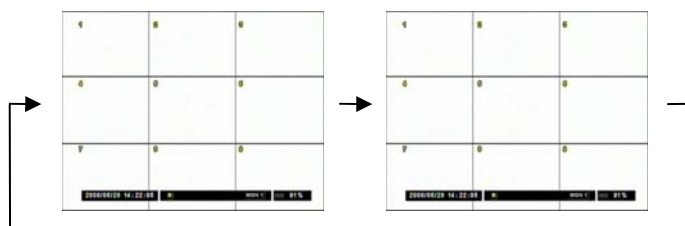
Single channel view mode automatic sequence



Quad view mode automatic sequence



Nine channel view mode automatic sequence



*** AL-3200:**

**By default Monitor 1 displays cam 1~16, Monitor 2 displays cam 17~32.
Monitor switch function can be used to toggle between cam 1~16 and cam 17~32 on the Monitor 1 and VGA.**

Down arrow from the DVR or   can be used to manually move to the next set of channels.

3. ZOOM

From LIVE VIEW mode, it is possible to zoom into a portion of the screen to get a digitally zoomed view of the section.



Press the zoom button to digitally zoom in the picture.



Use the directional buttons to move the zoom area.

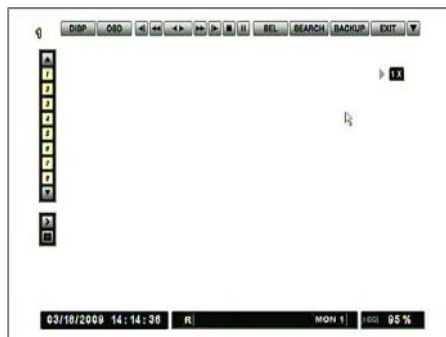
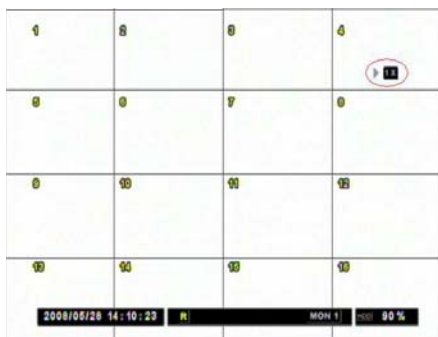


Press the zoom button once more to return to normal view.

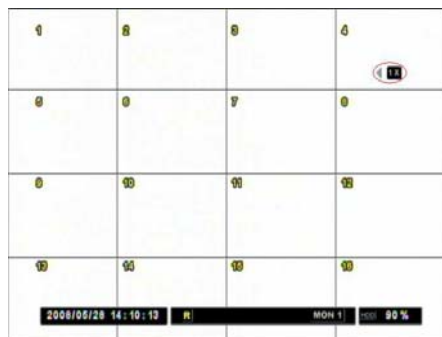
C. PLAYBACK

1. PLAY BACK CONTROL








When the PLAY button is pressed during LIVE mode, the DVR will play back the most recent data. When the DVR reaches the end of the recorded data, it will freeze on the last recorded frame. The recorded file can be playback in various modes. The user can perform reverse playback, fast reverse and fast forward up to 32 times the normal speed, pause, or view picture by picture using the step buttons. AL-3200 requires monitor switching from monitor 1 to 2 in order to play 17 ~ 32 channels.



Press the PLAY button from the DVR or press  button. The play icon will be displayed. The DVR will begin playback from the most recently generated data if playing back for the first time.



Press the PLAY button once more and the DVR will change its playback direction to reverse.

	PLAYBACK, REVERSE: Press to start playback. During the playback, press it again for reverse playback.
	PAUSE:  appears on the screen.
	PICTURE BY PICTURE: After paused, use these buttons to view picture by picture.
	FAST REVERSE, FAST FORWARD: Press the button repeatedly to play up to 32x than the normal speed. Press playback button to go back to normal speed.
	STOP: Stops playback and exit from the playback mode.
	PLAYBACK SPEED: Indicates current playback speed. 1, 2, 4, 8, 16, 32 times. Press directional arrows to reverse the playback direction during fast playback.

2. AUDIO PLAYBACK

The APEX LITE DVRs supports 4 channels audio recording. Unlike video data that can be recorded at various recording rates, an audio data is always recorded in real time,. The audio can only be heard in single channel viewing mode.

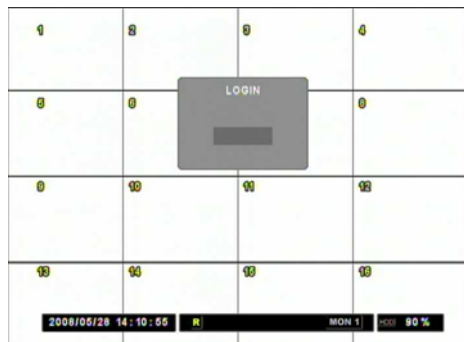


If the audio is present during playback, the audio icon will appear on the top right corner of the screen.

III. ADVANCED OPERATION

This section will cover advanced features of the DVR. This instruction manual will assume that the section on basic operation has been read and understood. The advanced operation will require occasional reference to some of the features explained in the ADVANCED SETTINGS section. This section will address LOCK, BACKUP, Pan/Tilt/Zoom camera control and advanced playback functions.

A. LOCK



The buttons on the DVR can be locked by pressing the LOCK button. Once locked, the lock LED will illuminate, and all buttons will be disabled except the lock button. Pressing buttons on the DVR or the remote controller will have no effect.

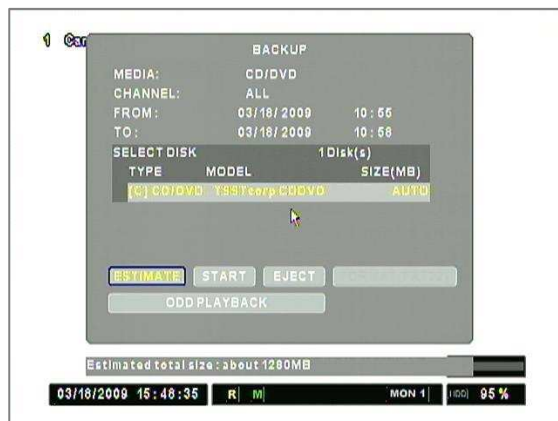
To unlock the buttons, press the lock button or double click on the screen if mouse is used, and then enter the appropriate password to unlock the buttons.

B. BACKUP

The APEX DVR offers a variety of backup methods, from the built-in DVD-RW to a USB thumb drive. AL-3200 requires monitor switching to perform CUSTOM channel mode backup.

1. Built-in CD/DVD

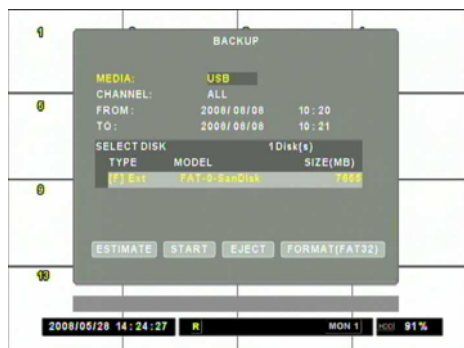
The APEX DVR comes with a built-in DVD-RW where video backup can be easily made. It supports blank CD-R and DVD-R media.



1. Select MEDIA as **CD/DVD**.
2. Highlight EJECT then press the ENTER button to open the tray. When the tray opens, insert a blank CD-R or DVD-R then close the tray.
3. To copy all the cameras, set CHANNEL as ALL otherwise, set CHANNEL as CUSTOM. To specify cameras, go down to CHANNEL LIST and press the number buttons associated with the camera numbers.
4. Set the desired backup range then select START.

*ESTIMATE provides the file size based on all cameras.

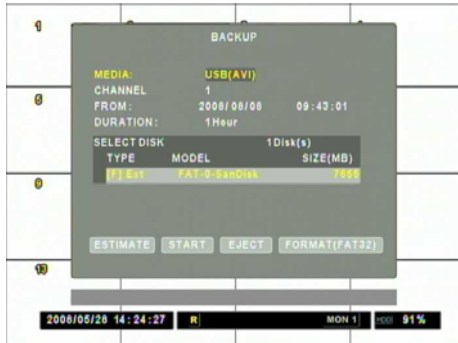
2. USB FLASH MEMORY DRIVE - "USB"



1. Insert a USB thumb drive then set MEDIA as **USB**.
2. If necessary, select **FORMAT(FAT32)** to format the device.
*Warning: Formatting will delete all the data in the USB thumb drive. If necessary, copy or transfer the data to another device before formatting.
3. To copy all the cameras, set CHANNEL as ALL otherwise, set CHANNEL as CUSTOM. To specify cameras, go down to CHANNEL LIST and press the number buttons associated with the camera numbers.
4. Set the desired backup range then select START.

*ESTIMATE provides the file size based on all cameras.

3. USB FLASH MEMORY DRIVE – “USB(AVI)”



1. Insert a USB thumb drive then set MEDIA as **USB(AVI)**.
2. If necessary, select FORMAT(FAT32) to format the device.
*Warning: Formatting will delete all the data in the USB thumb drive. If necessary, copy or transfer the data to another device before formatting.
3. Select the desired camera for AVI backup.
4. Set the start time and the duration (max. 60 min) then select START.

*To play the avi file on the Windows Media Player, installing a codec may require. Codec installer can be found in the Client Software CD.

4. MINI PLAYER



Upon Backup, the Mini Player will be copied into the optical media or USB thumb drive automatically. There is no need to install separate software to view the clips.

For advanced playback options, please use NUVICO EasyNet - VMS.

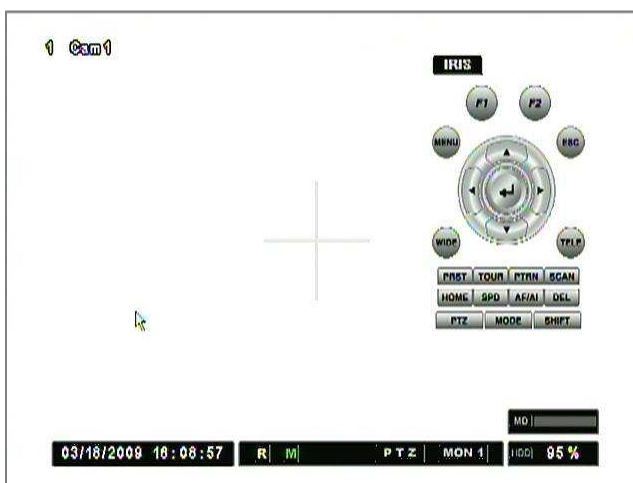
C. PAN / TILT / ZOOM CONTROL

The APEX DVR supports a variety of PTZ cameras. Please read the PTZ manufacturer's instruction manual and confirm their settings fully prior to proceeding to any attempts to connect and control the PTZ camera through the APEX DVR. Please match the configurations of the DVR with the PTZ settings in following menus **DEVICE**→**COM PORT** and **DEVICE**→**CAMERA**→**PTZ ID** in the main **MENU**.

COM PORT	COM PORT: Name and type of the port that is used to connect the PTZ
PTZ ID	PTZ ID: ID number of the PTZ camera. It is suggested to match with channel numbers















To control a PTZ camera press the appropriate channel number to display in full screen then press PTZ button to control the PTZ camera. **PTZ** icon is displayed while in PTZ control mode. Controlling PTZ function is also supported from the remote controller and Mouse.

Notice: While in PTZ mode, no other buttons will work in DVR operation mode. To exit from a PTZ mode, press PTZ button and **PTZ** icon will be disappeared.



The remote controller and the PTZ GUI share the same button layout. A remote controller can be used to control a PTZ if a mouse is not present. **Some buttons and functions only works with NUVICO PTZ models in NUVICO protocol.**

	DIRECTION: Also used as a directional, enter and esc button in the PTZ menu. Press right click on the mouse to hide the PTZ GUI.
	MOUSE MOVEMENT TRACK: For NUVICO PTZs, a PTZ camera can be moved with the mouse clicks on the picture. The camera will track the mouse movement and change its speed based on the distance of the mouse point from the center of the picture.
	MENU: Access menu of the PTZ camera.
	ESC

	TELE, WIDE: Zoom in and out. Also used as a enter button on the PRESET, TOUR, PATTERN and SCAN function setup menu.
	FUNCTIONS: Used as an Iris Close/Open during IRIS mode. Also used as a focus Far/Near in FOCUS mode. In FOCUS mode it can be used as a 'save & exit' button in PRESET, TOUR, PATTERN and SCAN function setup menu.
	PRESET: Press desired preset number + PRESET button to run a preset. Press this button to open a preset programming menu.
	TOUR: Press desired tour number + TOUR button to run a tour. Press this button to open a tour programming menu.
	PATTERN: Press desired pattern number + PATTERN button to run a pattern. Press this button to open a pattern programming menu.
	SCAN: Press desired scan number + SCAN button to run a scan. Press this button to open a scan programming menu.
	Home: Press 1 + HOME button to run a home function.
	SPEED CONTROL: Press desire number + SPD button to change control speed.
	AUTO FOCUS/ AUTO IRIS
	DELETE: Used to delete a preset.
	PTZ: Enter or Exit from PTZ control mode.
	MODE: Toggles between FOCUS and IRIS mode.
	SHIFT: Press desired number and press this button to program a preset
	NUMERIC BUTTONS: double click the video to display numeric keyboard. Right click to hide.



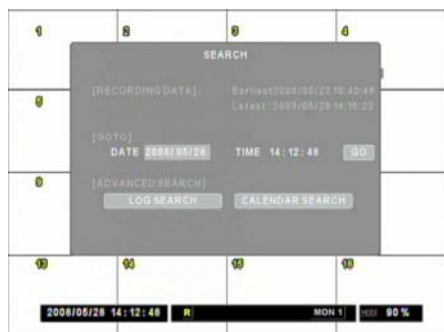
Press PTZ button to initiate PTZ function. The PTZ icon will appear on the status bar. Thereafter, use the navigation buttons, as well as Tele and Wide buttons, to control the PTZ camera.

In case using NUVICO protocol, the PTZ camera menu can be accessed by pressing MENU button.

D. PLAYBACK

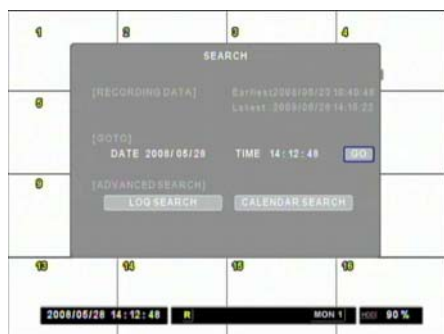
APEX DVR offers various search options for the video playback. It includes instant playback by pressing playback button from the LIVE mode.

AL-3200 requires monitor switching to playback 17~32 channel.



Press the SEARCH button to access various search modes.

1. GOTO SEARCH



GOTO may be used to play back precise Date & Time.

Input desired date & time then select GO. The playback date & time will change on the status bar.

Press ESC button to remove SEARCH window from the screen.

2. LOG SEARCH



LOG SEARCH allows for playback by event history logs.

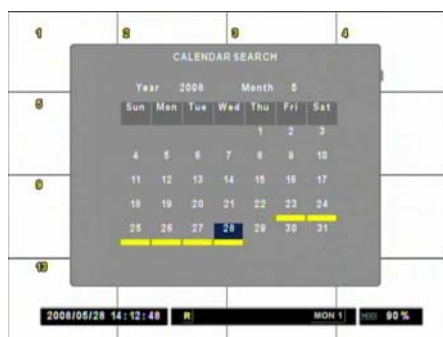
Select desired time range for log search. Choose the type of the event (motion, alarm) or select all.

Select SEARCH, list of event will be generated. Select desired event from the link then press the ENTER button.

Press ESC button to exit from search mode.

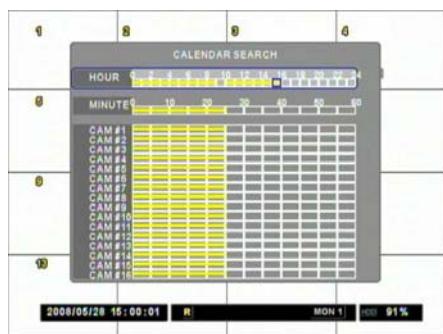
3. CALENDAR SEARCH

Choose CALENDAR SEARCH from the main SEARCH menu.



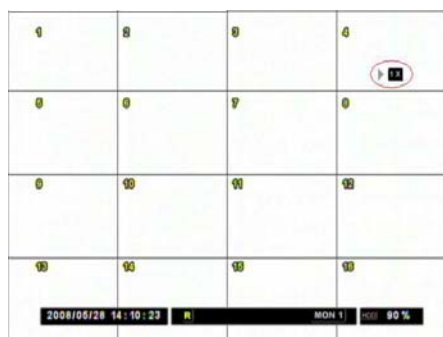
Use the directional buttons to navigate to the desired YEAR, MONTH. Highlight the calendar body and press ENTER to select desired date.

Choose the yellow marked recorded date and press ENTER to access the selected date.





Use the directional buttons to navigate to the desired hour and minute slot.


Color bar code:
Normal record: Yellow
Event record: Red



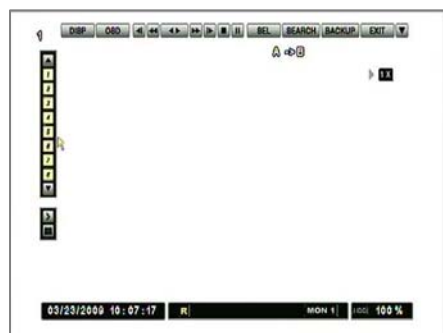
SEL button can be used to mark user defined backup time.

Press SEL button when playback reaches the desired start time for backup. A  icon displays.

While  icon blinks, press SEL button once again soon as the playback reaches the desired end time for the backup.

While  stays still, press BACKUP button to access the backup menu. The pre-marked start and end time for the backup should be in the time range set area of the backup menu.

While the DVR is playing back in any division mode, any number or the DISPLAY button can be pressed to change the display mode.



Same control applies while in mouse control mode.

IV. ADVANCED SETUP

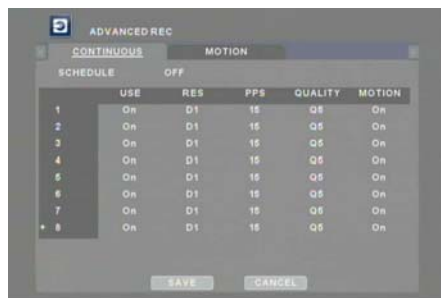
A. ADVANCED RECORD



ADVANCED RECORD offers two modes, SCHEDULE ON and SCHEDULE OFF. With SCHEDULE OFF, users may set different recording parameters on a camera by camera basis. Detailed recording configuration may be set by turning on the schedule option. With the SCHEDULE ON, the APEX DVR offers more detail-oriented recording options, including ALARM RECORD mode.


1. SCHEDULE OFF

1.1 CONTINUOUS

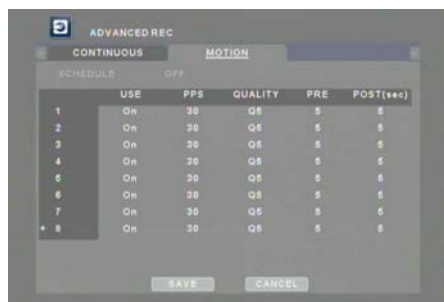


CONTINUOUS recording setup is for a normal recording. In this menu different settings can be configured for each camera.

Use combination of the ENTER button and the directional buttons to change the setting.


USE	USE: Defines uses of normal recording. If it's ON the channel will record all the time. If it's OFF it will not record (*for the motion recording ONLY mode, it should be kept OFF)
RES	RESOLUTION: D1 stands for 720 x 480 (4 CIF), FIELD stands for 720 x 240 (2 CIF), CIF stands for 360 x 240.
PPS	RECORDING FRAME RATE
QUALITY	QUALITY: Q1: Lowest quality Q5: Highest quality
MOTION	MOTION ON/OFF: Motion record function ON/OFF. Also linked to the USE of MOTION setup menu.
	NEXT PAGE: Go up or down for more menu pages.
SEARCH	SEARCH BUTTON: After adjusting a value, press SEARCH button to apply to the rest.

1.2 MOTION



Enter desired FRAME RATE, QUALITY, PRE-RECORD, and POST-RECORD settings for motion-based recording.

*The recording resolution follows by the CONTINUOUS record mode.

USE	USE: Defines use of motion based recording. If CONTINUOUS:OFF / MOTION:ON : the channel only records when motion is detected. If CONTINUOUS:ON / MOTION:ON : the channel records based on the CONTINUOUS record setup, it only changes its recording mode when motion is detected. If CONTINUOUS:ON / MOTION:OFF : the channel always records as long as the recording is on.
PPS	RECORDING FRAME RATE
QUALITY	QUALITY: Q1: Lowest quality Q5: Highest quality
PRE	PRE RECORDING TIME: Buffer recording time interval before the event occurs.
POST(sec)	POST RECORDING TIME: Additional recording time after the event finishes.
	NEXT PAGE: Go up or down for more menu pages.
SEARCH	SEARCH BUTTON: After adjusting a value, press SEARCH button to apply to the rest.

2. SCHEDULE ON

When the schedule is on, users may define their own daytime, nighttime, as well as weekend record settings. In case utilizing external alarm sources, ALARM RECORD settings can be adjusted.

2.1 SCHEDULE - DAY

DAY:	USE	RES	PPS	QUALITY	MOTION	ALARM
1	On	D1	15	Q5	On	Off
2	On	D1	15	Q5	On	Off
3	On	D1	15	Q5	On	Off
4	On	D1	15	Q5	On	Off
5	On	D1	15	Q5	On	Off
6	On	D1	15	Q5	On	Off
7	On	D1	15	Q5	On	Off
8	On	D1	15	Q5	On	Off

Select DAY to configure the time range that will follow the SCHEDULE - DAY setting.

The rest of the hour will automatically follow the SCHEDULE - NIGHT setting.

Enter desired record settings for daytime recording.

ALARM record can be turned ON/OFF for each channel. Refer page 36,37 for the detail of the configuration.

2.2 SCHEDULE - NIGHT

NIGHT:	USE	RES	PPS	QUALITY	MOTION	ALARM
1	On	D1	15	Q5	On	Off
2	On	D1	15	Q5	On	Off
3	On	D1	15	Q5	On	Off
4	On	D1	15	Q5	On	Off
5	On	D1	15	Q5	On	Off
6	On	D1	15	Q5	On	Off
7	On	D1	15	Q5	On	Off
8	On	D1	15	Q5	On	Off

Enter the desired record setting for nighttime recording.

ALARM record can be turned ON/OFF for each channel. Refer page 36,37 for the detail of the configuration.

2.3 SCHEDULE - WEEKEND

WEEKEND:	USE	RES	PPS	QUALITY	MOTION	ALARM
1	On	D1	15	Q5	On	Off
2	On	D1	15	Q5	On	Off
3	On	D1	15	Q5	On	Off
4	On	D1	15	Q5	On	Off
5	On	D1	15	Q5	On	Off
6	On	D1	15	Q5	On	Off
7	On	D1	15	Q5	On	Off
8	On	D1	15	Q5	On	Off

Select WEEKEND to set the days that will follow the weekend schedule. Thereafter, enter the desired record setting for weekend recording.

ALARM record can be turned ON/OFF for each channel. Refer page 36,37 for the detail of the configuration.

2.4 MOTION - DAY

DAY	USE	PP5	QUALITY	PRE	POST(sec)
1	On	30	Q5	5	5
2	On	30	Q5	5	5
3	On	30	Q5	5	5
4	On	30	Q5	5	5
5	On	30	Q5	5	5
6	On	30	Q5	5	5
7	On	30	Q5	5	5
8	On	30	Q5	5	5

Enter the desired record settings for daytime motion recording.

Refer page 36,37 for the detail of the configuration.

2.5 MOTION - NIGHT

NIGHT	USE	PP5	QUALITY	PRE	POST(sec)
1	On	30	Q5	5	5
2	On	30	Q5	5	5
3	On	30	Q5	5	5
4	On	30	Q5	5	5
5	On	30	Q5	5	5
6	On	30	Q5	5	5
7	On	30	Q5	5	5
8	On	30	Q5	5	5

Enter the desired record settings for NIGHT motion recording.

Refer page 36,37 for the detail of the configuration.

2.6 MOTION - WEEKEND

SENSOR	FRAMES	QUALITY	PRE	POST
CAM1	1	Q3	1	1
CAM2	2	Q3	1	1
CAM3	3	Q3	1	1
CAM4	4	Q3	1	1
CAM5	5	Q3	1	1
CAM6	6	Q3	1	1
CAM7	7	Q3	1	1
CAM8	8	Q3	1	1

Enter the desired record settings for WEEKEND motion recording.

Refer page 36,37 for the detail of the configuration.

2.7 ALARM RECORDING

SENSOR	PP5	QUALITY	PRE	POST(sec)
1	15	Q5	1	1
2	ANY	Q5	1	1
3	15	Q5	1	1
4	4	Q5	1	1
5	5	Q5	1	1
6	6	Q5	1	1
7	7	Q5	1	1
8	8	Q5	1	1

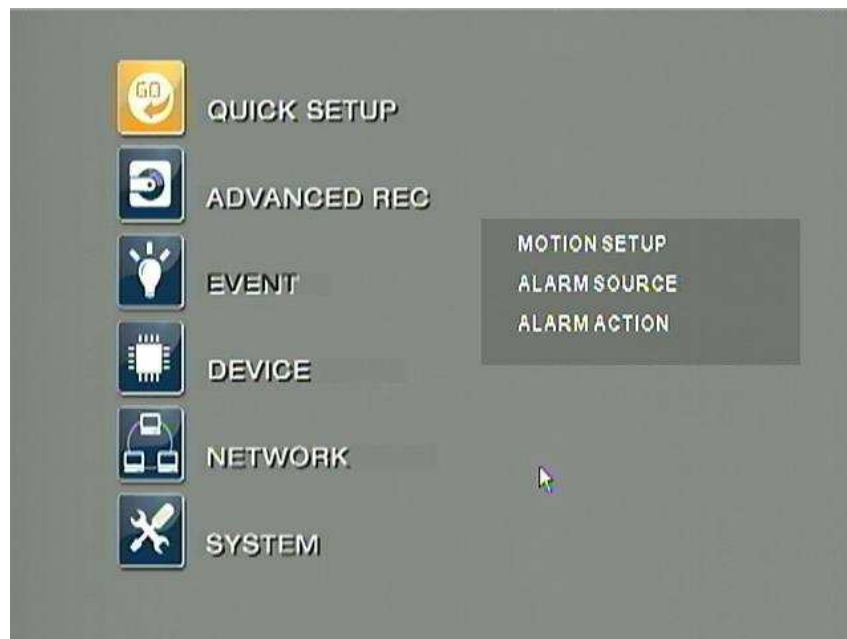
Each channel can be mapped with single, four or ANY input SENSOR.

Enter the desired record settings for ALARM RECORDING

PRE and POST recording duration follows by MOTION durations.

Refer page 36,37 for the detail of the configuration.

B. EVENT



Event menu allows customization of motion related options as well as alarm related options.

1. MOTION SETUP



Motion grids as well as the sensitivity level can be adjusted under Motion Setup.

If Camera is set as ALL, the values will be applied to all the cameras.

To make individual adjustment, select Camera Select and then press the left or right arrow button to desired channel.

CAMERA SELECT	CAMERA SELECT: ALL: Applies to all cameras. # OF CAMERA: Adjust single camera.
SENSITIVITY LEVEL	SENSITIVITY LEVEL: LEVEL1: Less sensitive LEVEL10: Most sensitive.
MOTION GRIDS	MOTION GRIDS: SELECT ALL, CLEAR ALL, SELECT AREA
TEXT TO MOTION	TEXT TO MOTION ON/OFF: Handles POS text input as a motion event.
CUSTOMIZE	MOTION GRIDS CUSTOMIZATION

1.1 MOTION GRIDS



By default, all the motion grids are activated for all cameras and the sensitivity level is 7.

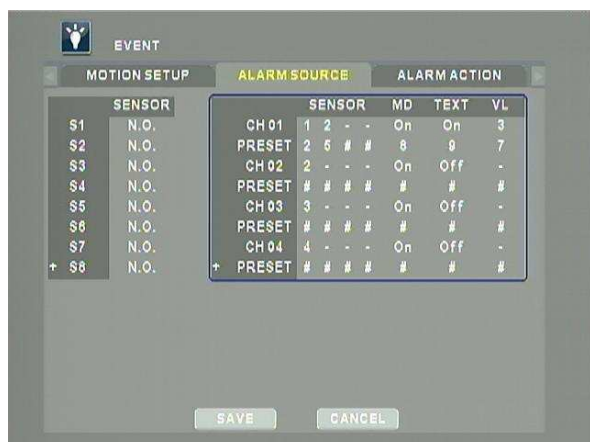
To modify the setting, select the camera then adjust the sensitivity level. To activate/deactivate motion grids, select Customize..



Use the combination of the enter button and the directional buttons to activate or de-activate the grids.

Clear: detection OFF
Colored: detection ON

2. ALARM SOURCE



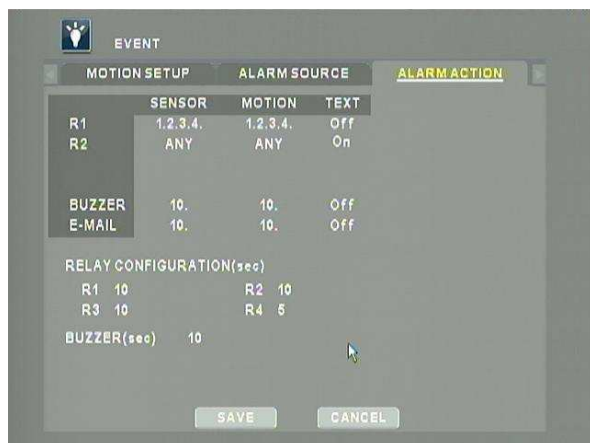
In case utilizing Alarm Inputs for alarm recording, configure the appropriate circuit type, N/O or N/C.

Additionally, PTZ event preset may be configured. When an event such as alarm trigger, motion, or video loss occurs, APEX DVR sends preset command to PTZ camera.

See the action policy below for the sample screen.

SOURCE OF THE EVENT	ACTION OF THE PTZ CAMERA ON CHANNEL1
SENSOR 1	PRESET 2
SENSOR 2	PRESET 5
MOTION	PRESET 8
POS TEXT	PRESET 9
VIDEO LOSS ON CH 3	PRESET 7

3. ALARM ACTION



ALARM ACTION configures how APEX DVR notifies when an event occurs.

RELAY CONFIGURATION: duration time after the relay is triggered.

BUZZER: duration time after the buzzer is ringed.

See the action policy below for the sample screen.

SOURCE OF THE EVENT	ALARM ACTIONS
SENSOR OR MOTION ON 1,2,3,4 ONLY	RELAY1
ANY SENSOR OR MOTION	RELAY2
SENSOR OR MOTION ON 10 ONLY	BUZZER, E-MAIL
ANY POS TEXT	RELAY 2

C. DEVICE



DEVICE menu allows customization of attached devices such as CAMERAS, MONITORS, AUDIO DEVICES, COMPORT for PTZ cameras, and Keyboard controller (CK-3X) and TEXT INPUT DEVICES for POS system.

1. CAMERA



Following display configuration can be customized from CAMERA menu.

NAME, STATUS, VIDEO TYPE(auto), COLOR MODE, AGC, BRIGHTNESS, CONTRAST.

PTZ PORT: Select COM port

PTZ ID: Address of the PTZ camera

For the PTZ port configuration, please refer to COM PORT section of the manual.

2. MONITOR

Each monitor can be configured in a different way. Select the appropriate monitor prior to making any adjustment.



AL-1600 supports 1 main BNC, 1 VGA and 1 spot output. Each main BNC and spot output can be configured for different functions.

AL-3200 supports 2 main BNC (MON 1:1~16ch, MON 2:17~32ch) and 1 VGA. MONITOR SWITCHING function can be used to switch between monitors.

MONITOR SELECT	MONITOR SELECT: MAIN MONITOR/ SPOT MONITOR(AL-400,800,1600), MONITOR 1,2(AL-3200)
EVENT POP-UP	EVENT POP-UP INTERVAL: Displays a camera(s) in full screen when an alarm or motion triggers.
CAMERA SEQ	CAMERA SEQUENCE INTERVAL
VGA MODE	VGA DISPLAY MODE: 800x600, 1024x768, 1280x1024
COVERT CHANNEL LIST	CONVERT CHANNEL LIST: Configure channels to be hidden on LIVE and PLAYBACK. The hidden channels are still being recorded. Each monitor can have different set of hidden channels.
SEQUENCE TOUR LIST	SEQUENCE TOUR LIST: Customized tour mode up to 16 custom sets. Each set can display from single camera display to 16 camera display mode.
MONITOR SWITCHING	MONITOR SWITCHING ON/OFF: Toggle between monitor 1 and 2 on MONITOR 1 and VGA output. (ONLY AVAILABLE IN AL-3200)

3. AUDIO



DVR allows user to synchronize audio channels with desired video channel. Also, the Audio Gain level may be adjusted.

4. COM PORT



Configure devices such as PTZ cameras and Keyboard Controller that utilize COM ports.

RS-232C is fixed for COM 1

RS-485 is fixed for COM 2 & 3

After making physical connection, Select the appropriate device and then enter the corresponding baud rate, parity, stopbit, and databit.

*COM1 can be connected directly to the serial port of the NUVICO junction box for NVCK-3X keyboard controller for a direct communication.

5. TEXT INPUTS



Configure text input devices such as POS system.

COM1 must set to TEXT mode in order for the TEXT INPUTS mode to function properly.

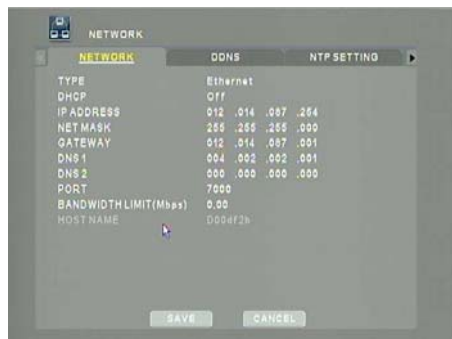
*APEX DVR supports VSI Pro from AVE in single and network mode.

D. NETWORK



The DVR utilizes widely available broadband Internet connections such as T1, Cable, and DSL to allow remote access, monitoring, playback and control of the DVR in a relatively reliable manner.

1. NETWORK



Input the appropriate values for network connection. To find out the values, please contact the network administrator or Internet Service Provider.

Even if the DVR is connected to a dynamic ip services, the DVR can be viewed from a remote location by using NUVICO Dynamic DNS service.

Hostname formats:
Internet Explorer: <http://hostname.connectip.net:port#>
NUVICO EasyNet VMS: hostname.connectip.net

2. DDNS



The server URL is set as connectip.net, hosted by NUVICO.

It can manually be turned off if the user does not want to use NUVICO server.

3. NTP SETTING



If an NTP server is available for time sync, enter the appropriate values.

NTP MODE

Client: set to be a client for a time server

Server: set to be a time server for other APEX DVR.

SERVER LOCATION: Indicates the network location of the time server.

LOCAL SERVER IP: IP address of the server if it is in local network, otherwise default public ip address will be used for time synchronization.

4. NOTIFICATION



Enter receiver's e-mail address for simple e-mail notification.

If a local SMTP server must be used, the information should be obtained by an IT professional.

The DVR will send notifications related to the system abnormalities such as;

HDD Fail, Alarm, Fan Fail, Password Fail, DDNS Register Fail, and Video Loss.

ATTACH PICTURE option is ONLY supported when ENCODING PRIORITY is set to RECORDING. Refer SYSTEM menu for more detail.

CONFIGURING THE DVR WITH A ROUTER INTO A LAN

The majority of any network will often consist of a single IP address which shares the internet access through a router. This IP address may be any external (public) static IP address or any dynamic IP address issued by the Internet Service Provider.

The purpose of a router is to enable multiple personal computers and any other devices that require internet connection to access the internet simultaneously. Most routers by default enable (open) commonly used ports so that mainstream applications such as Hypertext Transfer Protocol (HTTP, Port 80), File Transfer Protocol (FTP, Port 21), Telnet (Port 23) and Post Office Protocol 3 (POP3, Port 110) are used.

Over the next pages, Linksys WRT54G was used to illustrate a sample procedure.

Open Internet Explorer then type in `http://192.168.1.1` to access the router. Enter the User Name and Password to access the router. You will then be taken to the main menu. The factory user name is **blank** and password is **admin**.

Connect to 192.168.1.1

WRT54GS

User name:

Password:

☐ Remember my password

OK Cancel

LINKSYS
A Division of Cisco Systems, Inc.

Firmware Version: v3.37.6

Wireless-G Broadband Router with SpeedBooster WRT54GS

Setup

Setup | Wireless | Security | Access Restrictions | Applications & Gaming | Administration | Status

Basic Setup | DDNS | MAC Address Clone | Advanced Routing

Internet Setup

Internet Connection Type: Automatic Configuration - DHCP

Optional Settings (required by some ISPs)

Router Name: WRT54GS

Host Name:

Domain Name:

MTU: Auto

Size: 1500

Network Setup

Router IP

Local IP Address: 192 . 168 . 1 . 1

Subnet Mask: 255 . 255 . 255 . 0

DHCP Server: ☒ Enable ☐ Disable

Starting IP Address: 192.168.1.100

Maximum Number of DHCP Users: 50

Client Lease Time: 0 minutes (0 means one day)

Static DNS 1: 0 . 0 . 0 . 0

Static DNS 2: 0 . 0 . 0 . 0

Static DNS 3: 0 . 0 . 0 . 0

WINS: 0 . 0 . 0 . 0

Time Setting

Time Zone: (GMT-08:00) Pacific Time (USA & Canada)

☒ Automatically adjust clock for daylight saving changes

Save Settings Cancel Changes

Automatic Configuration - DHCP: This setting is most commonly used by Cable operators.

Host Name: Enter the host name provided by your ISP.

Domain Name: Enter the domain name provided by your ISP.

More...

Local IP Address: This is the address of the router.

Subnet Mask: This is the subnet mask of the router.

DHCP Server: Allows the router to manage your IP addresses.

Starting IP Address: The address you would like to start with.

Maximum number of DHCP Users: You may limit the number of addresses your router hands out.

More...

Time Setting: Choose the time zone you are in. The router can also adjust automatically for daylight savings time.

CISCO SYSTEMS

Click on Application & Gaming tab to access port forwarding configuration page.

LINKSYS®
A Division of Cisco Systems, Inc.

Firmware Version: v3.37.6

Wireless-G Broadband Router with SpeedBooster

WRT54GS

Applications & Gaming

Setup

Wireless

Security

Access Restrictions

Applications & Gaming

Administration

Status

Port Range Forward

Port Triggering

DMZ

QoS

Port Range Forward

Port Range					
Application	Start	End	Protocol	IP Address	Enable
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>

Port Range Forwarding:

Certain applications may require to open specific ports in order for it to function correctly. Examples of these applications include servers and certain online games. When a request for a certain port comes in from the Internet, the router will route the data to the computer you specify. Due to security concerns, you may want to limit port forwarding to only those ports you are using, and uncheck the **Enable** checkbox after you are finished.

More...

Save Settings

Cancel Changes

CISCO SYSTEMS

Enter the three designated port: 7000 for the DVR. Point each port to the DVR. Illustration shows that the DVR's IP address being 192.168.1.85.

In the following examples, DVR7000 was used. Make sure you enable the port forwarding.

LINKSYS
A Division of Cisco Systems, Inc.

Firmware Version: v3.37.6

Wireless-G Broadband Router with SpeedBooster **WRT54GS**

Applications & Gaming

Setup Wireless Security Access Restrictions **Applications & Gaming** Administration Status

Port Range Forward Port Triggering DMZ QoS

Port Range Forward

Port Range					
Application	Start	End	Protocol	IP Address	Enable
dvr	7000	to 7000	Both	192.168.1.85	<input checked="" type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>
	0	to 0	Both	192.168.1.0	<input type="checkbox"/>

Port Range Forwarding:
Certain applications may require to open specific ports in order for it to function correctly. Examples of these applications include servers and certain online games. When a request for a certain port comes in from the Internet, the router will route the data to the computer you specify. Due to security concerns, you may want to limit port forwarding to only those ports you are using, and uncheck the **Enable** checkbox after you are finished.
More...

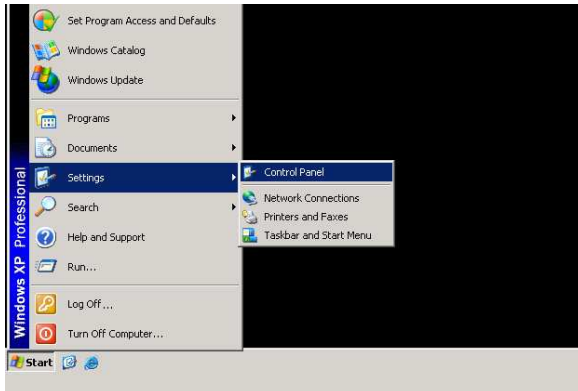
Save Settings **Cancel Changes**

CISCO SYSTEMS

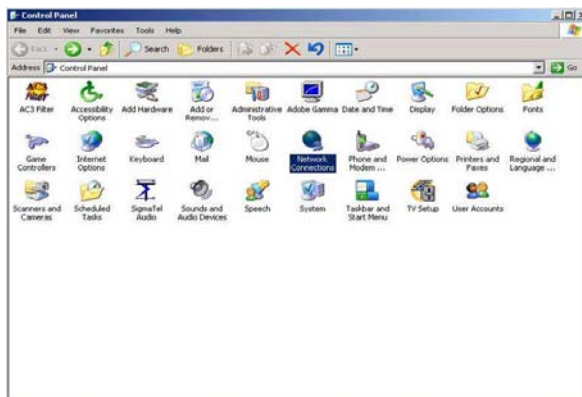
Port 7000 is added as shown.

CONFIGURING THE DVR WITH A Crossover Cable

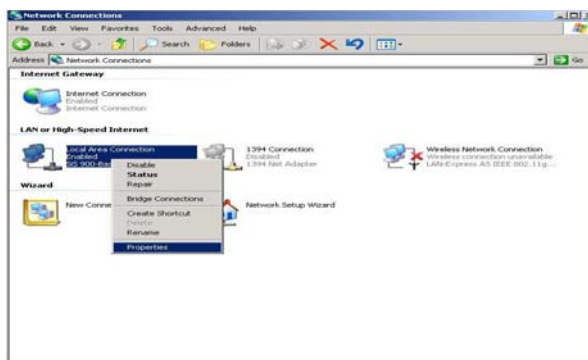
This section will explain how to configure the computer to connect directly to the DVR. The following illustration was based on a computer system running Windows XP Professional.



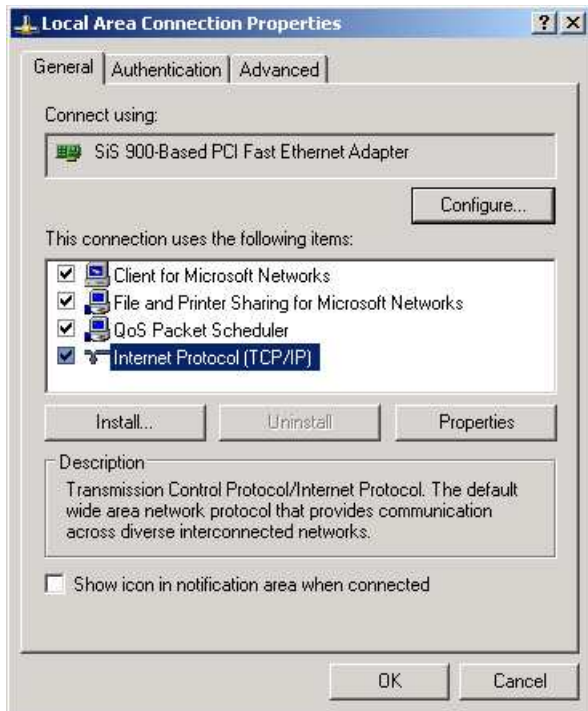
On the PC, click on Start, Settings, then Control Panel to open the Control Panel.



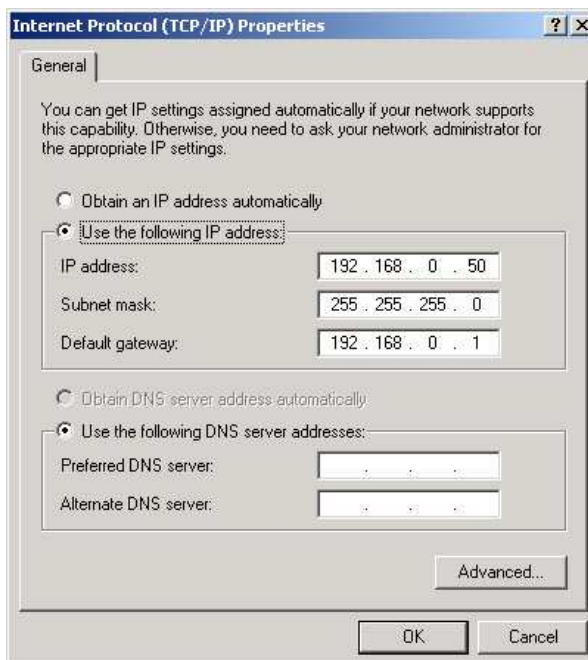
Double-Click on 'Network Connections' to open the network settings window.



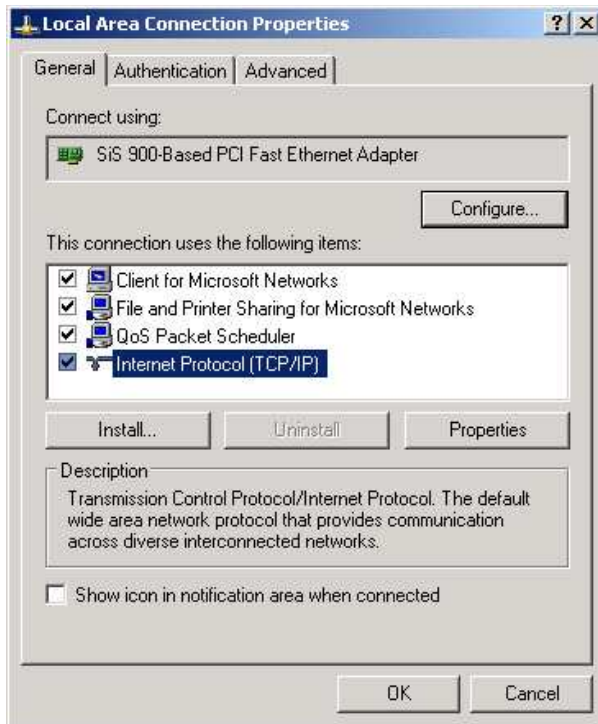
Right-Click on the 'Local Area Connection' icon to drop a pull-down menu, then click on Properties to enter the Local Area Connection Properties.



Double-Click 'Internet Protocol (TCP/IP)' to edit IP address information.



Select 'Use the following IP address', and enter a matching network address and host address for the computer. In this illustration, the IP address entered is 192.168.0.50. Please note that any host address may be used as long as it does not conflict with the router's host address (1) and the DVR's host address. Click 'OK' to save the settings.



Click OK to save the settings.

E. SYSTEM



The SYSTEM Menu allows modification of system features such as Local and Remote Passwords, Holiday Schedule, Disk Utility, System Info, System Alarm, and Status Overview.

1. LOCAL USER



Up to 5 Local User Account levels with different privileges.

USE	USE Y/N: Enable/Disable the use of the user
PW	PASSWORD: Must be 6 numeric digits
MENU	MENU: Access for the menu
PB	PLAYBACK: Access for Search & Playback
COPY	COPY/BACKUP: Access for Backup
PTZ	PTZ CAMERA: Access for PTZ camera control
AUTO LOGIN	AUTO LOGIN: A default user can be set to bypass all password prompts

2. REMOTE USER



Up to 10 Remote User Accounts can be configured. It is possible to assign different privileges, playback and relay control, to different remote user accounts.

Detail settings for remote user accounts can be configured with even greater detail including channel access on NUVICO EasyNet - VMS, the client software or on NUVICO EasyNet – WebViewer, the web client software.

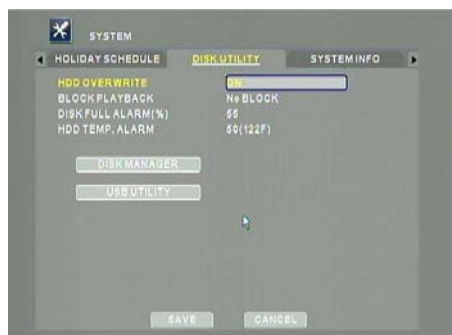
USE	USE Y/N: Enable/Disable the use of the user
ID	ID: ID for the user
PW	PASSWORD: Must be under 15 numeric digits and alphabet characters
RL	RELAY: Access to control relay remotely
PB	PLAYBACK: Access for remote Search & Playback
ADDITIONAL ACCESS CONTROL THROUGH REMOTE CLIENT SOFTWARE	
MICROPHONE	MICROPHONE: Access for two-way auto
PTZ	PTZ CAMERA: Access for PTZ camera control
QUICK REC	INSTANT RECORDING: Access for remote instant recording
CHANNELS	Channel access can be customized for each user

3. HOLIDAY SCHEDULE



Users may define their own Holidays if necessary. During the Holidays, the DVR will record as the Weekend Schedule recording.

4. DISK UTILITY



By default, the hard disk drive will overwrite from the beginning when it becomes full. BLOCK PLAYBACK, DISK FULL ALARM and HDD TEMP ALARM features can be modified, if desired.

DISK FULL alarm only activates when HDD ALMOST FULL alarm is activated under SYSTEM ALARM section of the menu

4.1 DISK MANAGER



Disk Manager is used to format/reuse a hard disk drive, as well as to check the presence of Bad Blocks on the HDDs.

Status description:

ON: the disk is physically connected and ready to record

OFF: the disk is physically connected but not ready to record.

NO: the disk is physically NOT connected

* DVD-RW always indicates as OFF.

* Recording must be stopped to access DISK MANAGER



To format a hard disk drive, select OFF under STATUS, then press ENTER. Select OK for format.

*If the hard disk was previously used from an APEX DVR and want to reuse it, select CANCEL for reuse without disk format.



A disk can be removed for storing purposes. Select ON under STATUS, then press ENTER.

Once a disk is removed, the STATUS changes to NO. Select NO under STATUS, then press ENTER to remove the disk from the list.

4.2 USB UTILITY



This menu allows users to update the firmware and load/save settings with a USB thumb drive.

5. SYSTEM INFO

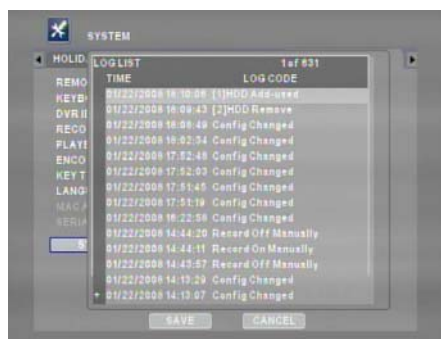


System information and options.

REMOTE CONTROL ID	ID set for remote controller. Up to 16 can be set
KEYBOARD CONTROL ADDR	Address to be controlled by NVCK-3X keyboard controller
DVR NAME	DVR name listed on the VMS network viewer
RECORD NO VIDEO	DVR also records a blank video during motion only recording. It also records while there is no video.
PLAYBACK DEINTERLACE	De-interlace full D1 picture to eliminate white interlace lines
ENCODING PRIORITY	RECORDING/NETWORK: changes encoding mode for full recording or faster network transmission (some limitation applies during network mode)
KEY TONE	Key tone for DVR buttons and remote controller
LANGUAGES	OSD language options
TRANSPARENCY	Transparency level control for OSD and MENU.
MONITOR KEY	ON/OFF. Enable /Disable MON button on the DVR
MAC ADDRESS	MAC address for the network port

*For faster network streaming, DVR may compensate 2 or 3 frames from recording when the Encoding priority is set to Network.

5.1 SYSTEM LOG



All system-related events and alerts of the DVR are listed in chronological order, starting from the most recent.

Press ENTER to navigate through the logs. Use LEFT or RIGHT arrow button to move by pages.

6. SYSTEM ALARM

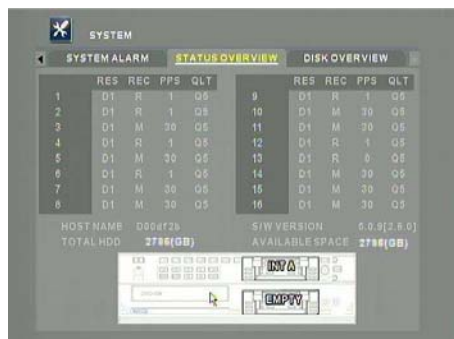


The DVR uses various event sources for system alert.

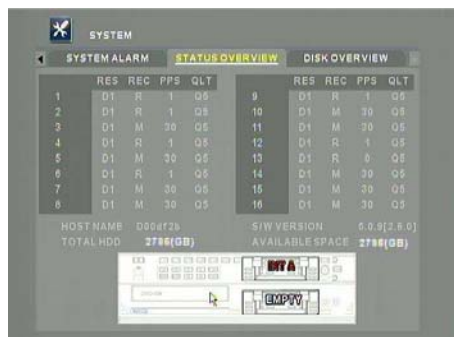
SYSTEM ALARM SOURCE	
HDD FAIL	Sends an alert incase of hard disk fail or errors
HDD ALMOST FULL	Sends an alert when HDD is almost full based on DISK UTILITY configuration
PASSWORD FAIL	Sends an alert incase of login attempt fails
DDNS REG-FAIL	Sends an alert when DDNS registration fails
VIDEO LOSS	Sends an alert incase of video loss (*a camera must set to USE OFF from the DEVICE menu in order to bypass the VIDEO LOSS)
SYSTEM ALARM METHOD	
WANING MESSAGE	Pop-up message
BUZZER	Audible buzzer built-in to the DVR
SEND E-MAIL	Sends e-mail based on the configuration of NOTIFICATION under NETWORK menu
RELAY-4 ON	Triggers relay 4

*HDD ALMOST FULL is only functional when HDD OVERWRITE is set to OFF.

7. STATUS OVERVIEW



STATUS OVERVIEW displays Current record settings, Host Name, Firmware Version, Total HDD Size, Free Space, and the status of the installed HDDs.



When the DVR cannot detect a hard disk drive, the corresponding drive port is displayed in red.

8. DISK OVERVIEW

Displays the status of all internal hard disk drives that are connected.
Supports RECORDING, S.M.A.R.T and TEMPERATURE mode



F. MAXIMUM RECORDING RATE & RESOLUTION LIMIT PER CHANNEL WITH ADVANCED FEATURES

ADVANCED FEATURES	AL-400	AL-800	AL-1600	AL-3200
NETWORK PRIORITY	15 pps @ CIF / Q5	15 pps @ CIF / Q5	15 pps @ CIF / Q5	15 pps @ CIF / Q5

V. NUVICO EasyNet - WebViewer

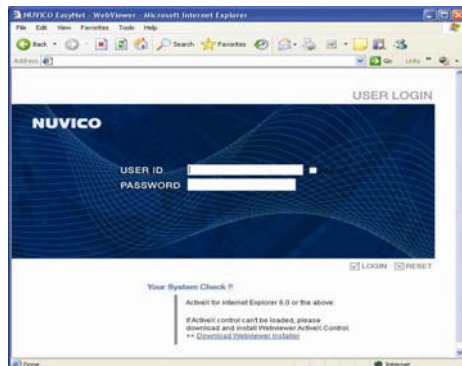
A. INSTALLING THE NUVICO EasyNet - WEBVIEWER

When a PC connects to the APEX DVR, the PC will automatically search for the web client viewer. If the web client software has not been installed, the DVR will direct the PC to an installer file which will download and install the APEX plug-in.

Before installing the NUVICO EasyNet - WebViewer, please verify that the computer onto which the program is being installed meets the minimum requirements:

	MINIMUM REQUIREMENTS
CPU	Intel Core™2 Duo 2.4Ghz
MEMORY	2 GB
Video Card	512 MB
Resolution	1024 x 1024
Operating System	Windows XP SP2
Direct X	8.1 or Higher
Internet Explorer	6

Open Internet Explorer and enter the DVR's IP address.



“admin” is the default USER ID as well as the PASSWORD.



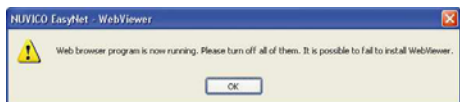
If the WebViewer application is not found, then an ActiveX installation prompt will appear.



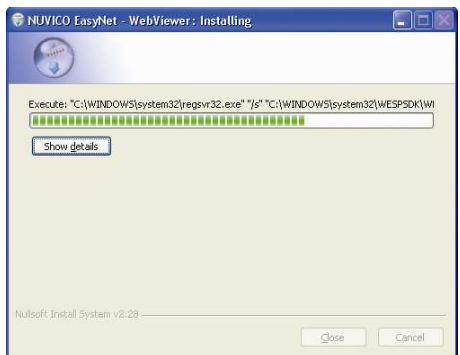
As illustrated, click the prompt bar to install the ActiveX control.



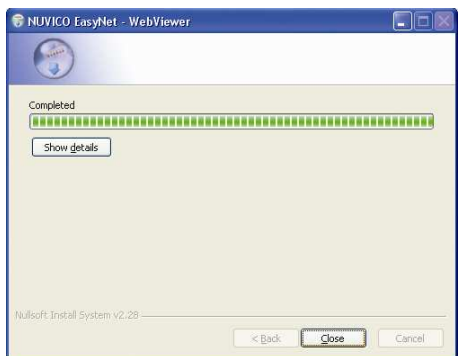
Click 'Install' to proceed.



Turn off all the web browser programs.



Installation in progress



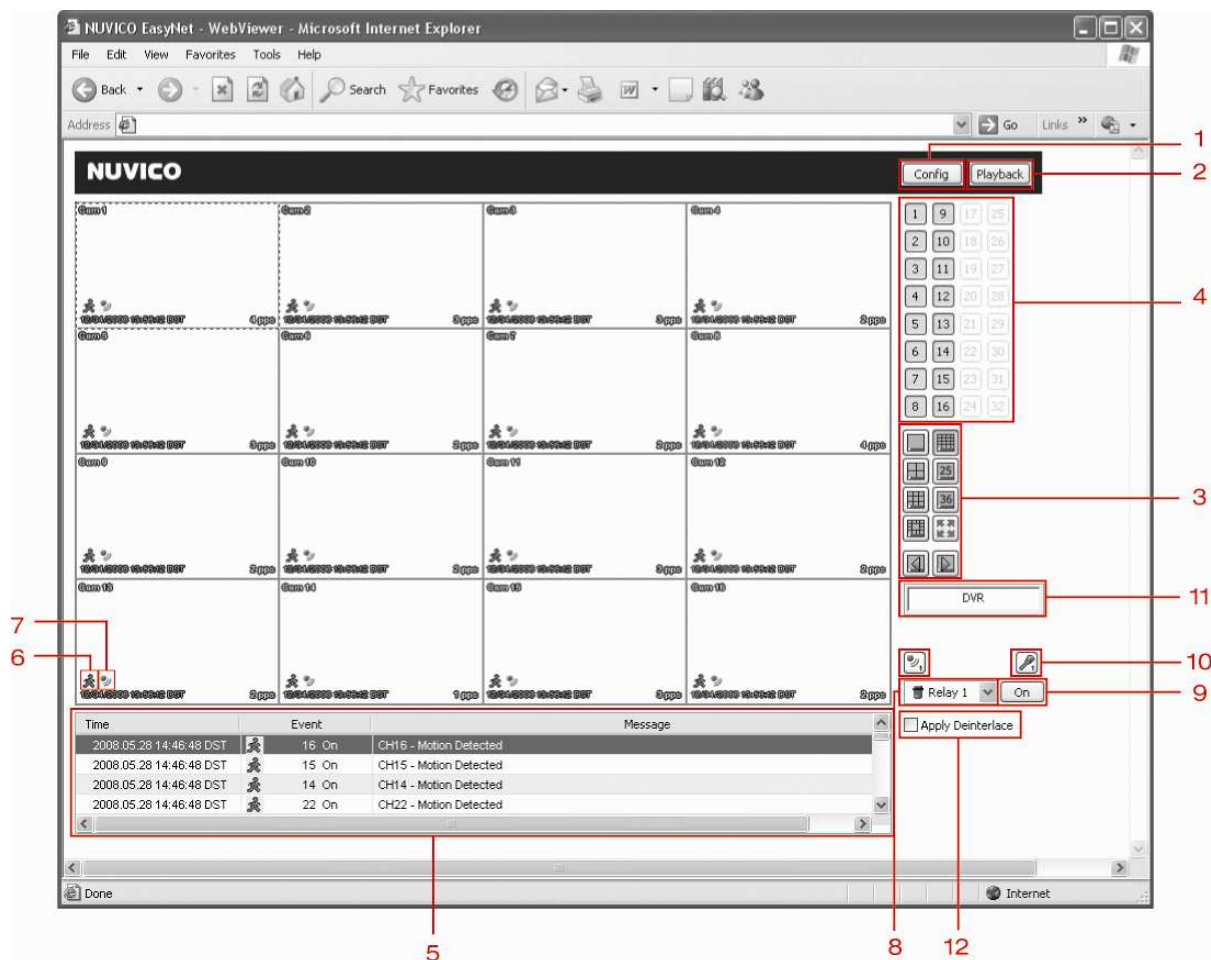
After the installation is completed, click 'Close'.

B. USING THE NUVICO EasyNet - WebViewer



Open Internet Explorer, type the DVR's IP address to connect, then type the user ID and the password.

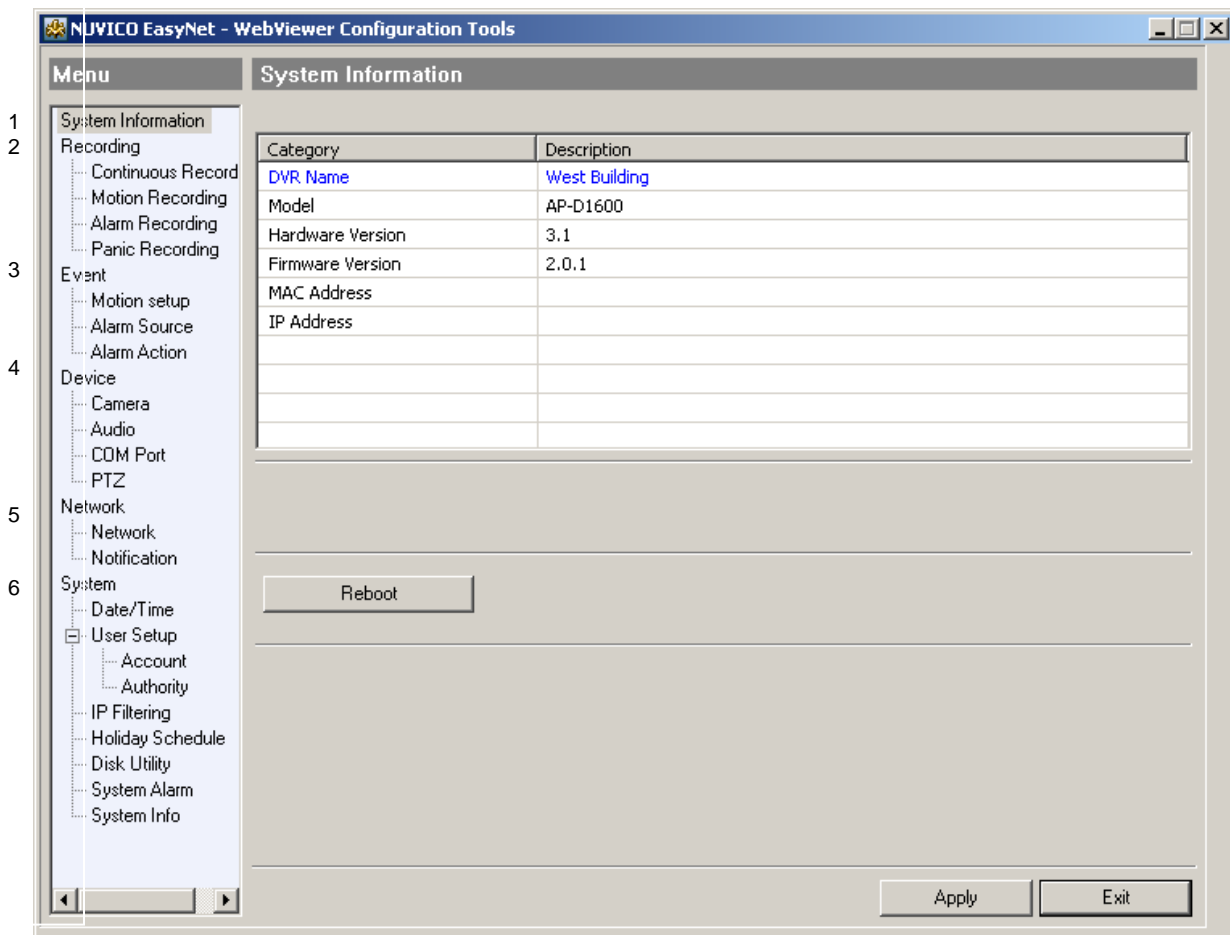
1. MAIN DISPLAY



1. CONFIG: Click to access Configuration Tools
2. Playback: Click to access playback
3. Camera: Click to turn on/off the camera from live view
4. Split Mode: Click on desired view mode icon to change split mode
5. Event Log: Displays and update event log in real time
6. Motion Icon: Indicates motion activity on camera
7. Alarm Icon: Indicates alarm event on camera
8. Alarm Indication: Indicates alarm event
9. Relay Control: If a relay device is present at the DVR, relay output may be controlled
10. Microphone: Two-way audio
11. DVR name
12. De-interlace on/off

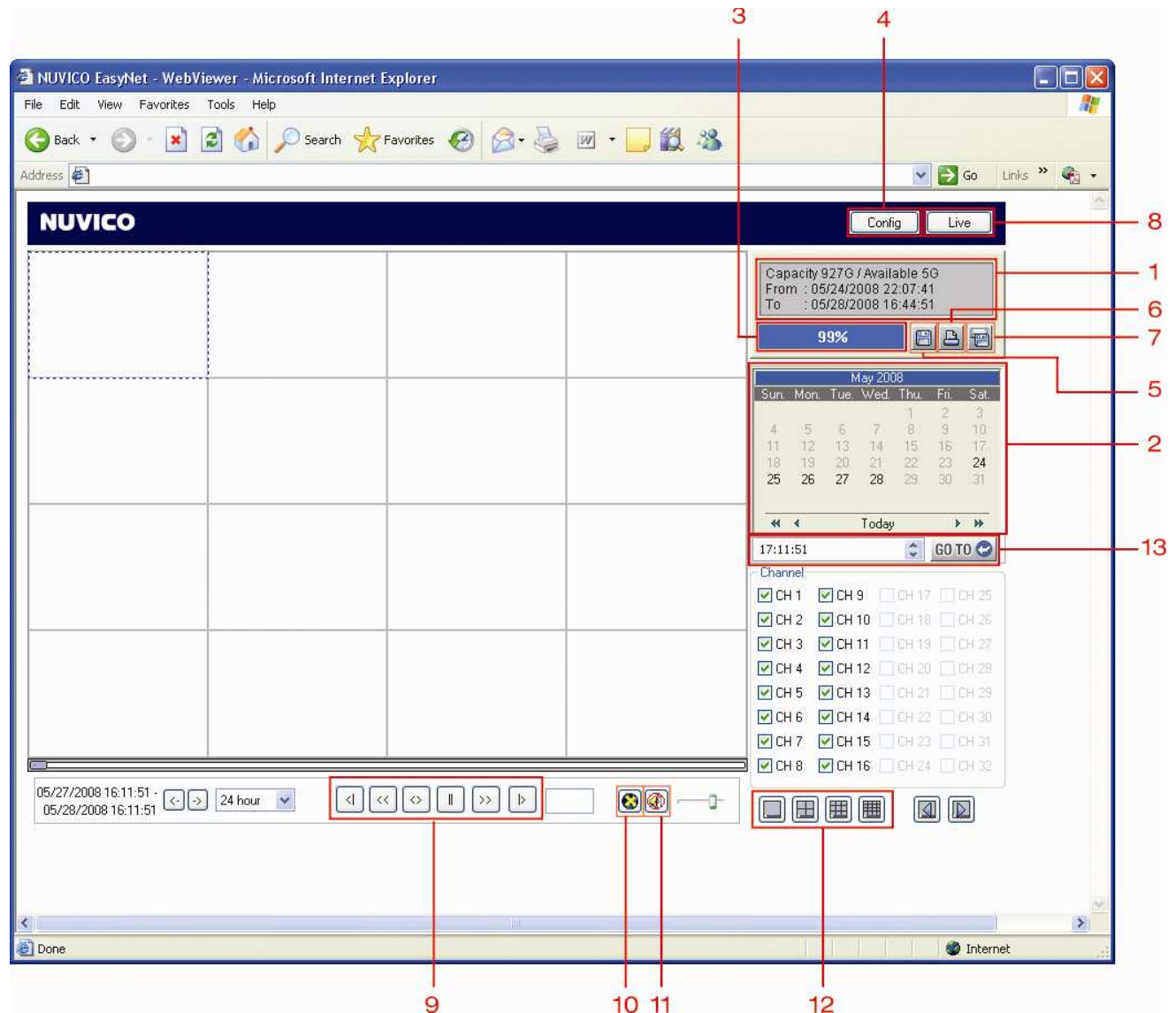
2. CONFIGURATION TOOLS

Click 'Config' to access Configuration Tools



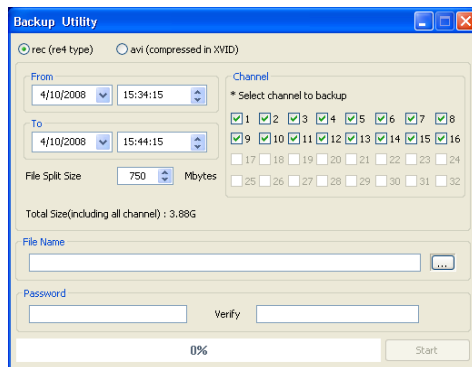
1. System Information: Indicates the DVR's information such as model, hardware version, firmware version, MAC address, and IP address
2. Recording: Configures record settings
3. Event:: Configures event-related options
4. Device: Configures devices such as cameras, audio devices, PTZ, etc.
5. Network: Configures network-related settings
6. System: Configures system-related options

3. PLAYBACK



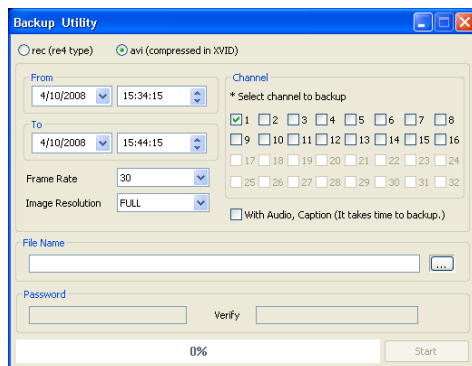
1. HDD Information: Displays HDD-related information such as capacity, available space, earliest recording, and most recent recording
2. Calendar: Click to select the date to play back
3. HDD Gauge: Displays percentage of used space out of total HDD capacity
4. Config: Click to access Configuration Tools
5. Save Image: Click to take a snapshot
6. Print: Click to print an image to a printer
7. Live: Click to return to live mode
8. Backup utility: Click to download recorded data to the local PC

8.1 REC



Choose Start Time and End Time, then camera(s). Next, select 'File Name' to designate a download folder as well as the file name. To make the file password protected, enter the password and verify the password.

8.2 AVI



Recorded data also may be downloaded as an AVI file, however, only one camera can be selected to download.

***Warning:** The AVI file may not be played back from Windows Media Player. The APEX codec must be installed on the PC in order to play back.

9. PB Control: (From the left) Step Reverse, Fast Rewind, Play or Reverse Play, Pause, Fast Forward, Step Forward

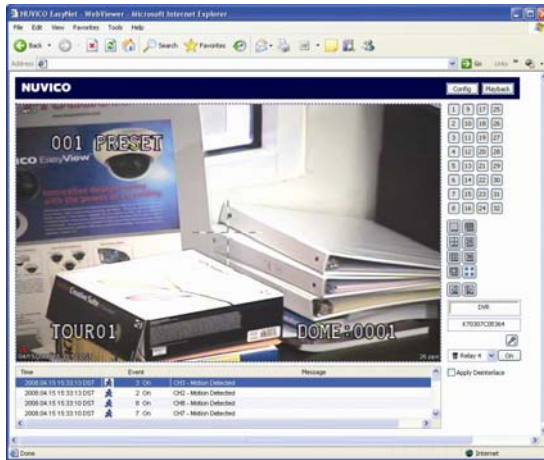
10. DirectX Control: Click on the icon to enable/disable DirectX

11. Audio PB: Click on the speaker icon to enable/disable mute. Also use the slide bar to control volume.

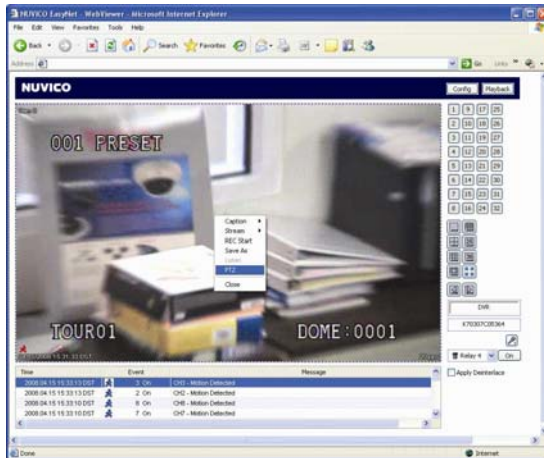
12. Split Mode: Click on the desired view mode icon to change split mode

13. GO TO: After selecting a date from the calendar, enter the time to play back

4. PTZ CONTROL



To control a PTZ camera, right click on the PTZ camera video, then click 'PTZ' to enter PTZ mode.



When a crosshair appears in the middle of the screen, click on the picture to pan or tilt. Use the mouse scroll (if equipped) to zoom in or zoom out.

VI. TECHNICAL SUPPORT

Please consult this manual, as well as our website FAQs thoroughly before contacting the NUVICO Help Desk. The NUVICO help desk is available Monday through Friday, 9:00am to 5:30pm Eastern Standard Time.

TOLL-FREE: 866-523-1700

TEL: 201-541-1605

FAX: 201-541-1620

E-MAIL: techsupport@nuvico.com

HOMEPAGE: <http://www.nuvico.com>

Notes

Notes